DIRECTORY CHANGES

**** GRAND RAPIDS BRASS ****

Grand Rapids Brass Co., Grand Rapids, Mich.
Manufacturers of locks, hinges, corners, drip traps, knobs, handles, and screw machine parts, in any finish.
J. L. Murray, pres. and gen. mgr.; H. M. Bertelson, vice-pres.; Carlton Austin, sec.-treas.; Chas. Goodrich, assist. sales mgr.; Elmer Osbeck, factory supt.
Branch offices: B. A. Hinman, 10 E. 43rd St., New York City; Ralph C. Hubert, Evansville, Ind.; G. V. Stroupe, High Point, N. C.; Otto M. Wenk, 2130 No. Kedzie Ave., Chicago; Nissen-Currier Co., San Francisco, Calif.; Nissen-Currier Co., Portland, Ore.; Nissen-Currier Co., Seattle, Wash. Foreign offices: Toronto, Ont., Canada; Mexico City, Mexico; Havana, Cuba; Sydney, Australia.

**** ATLAS PLYWOOD ****

Atlas Plywood Corp., 934 Park Square Bldg., Boston, Mass. Factories at Stockholm, Me., Greenville, Me., Richford, Vt., Montgomery Center, Vt., Morrisville, Vt.
Manufacturers of ATLAS refrigerator cases, plywood shipping containers for refrigerators.
R. M. Buck, pres.; E. I. MacPhie, vice-pres.; E. M. Soucy, treas.

**** ALASKA REFRIGERATOR ****

The Alaska Refrigerator Company, Muskegon, Michigan.
Manufacturers of ALASKA electric refrigerator cabinets.
E. J. Rook, pres.; J. L. Gillard, gen. mgr.; J. L. Collin, director of sales.

Polaraire Electric Refrigerator Co., 1610-12 North St., Philadelphia, Pa.
Manufacturers of POLARAIRE household electric refrigerators, commercial machines, motors, tubing, condensers and expanders, pressure controls.
L. V. Gilliam, pres.; Samuel Goodhartz, vice-pres.; R. M. Cook, secy.-treas.; Chas. J. H. Freeth, sales mgr.; Earl Perkins, service mgr.

Aluminum Company of America, Genera' Sales Office, Pittsburgh, Pa.
Manufacturers of aluminum sheet and moulding for refrigerator trimming. Also aluminum ingot, permanent mould castings, die castings, sand castings, forgings, tubing, wire, rod, aluminum bronze powder, aluminum screw machine products, stampings, and fabricated parts.
R. E. Powell, assistant sales manager, Pittsburgh, Pa.

Mueller Brass Co., 1925 Lapeer Ave., Port Huron, Mich.
Manufacturers of forged refrigerator valves and fittings, brass and copper forgings, screw machine products, brass and copper rod and tubing.
O. B. Mueller, pres. and gen. mgr.; F. L. Riggin, secy. and sales mgr.; R. W. Peden, treas.; Robert Mueller, vice-pres. (Decatur, Ill.); Reuben Levine, adv. mgr.; H. A. McDermott, pur. agt.; C. A. Hill, chief eng.; D. E. Lindquist, supt.

Bryant Electric Refrigerator Corp., New Milford, Pa.

Specifications

Trade name—BRYANT; Refrigerant—Sulphur dioxide; Compressor—Reciprocating; Control—Thermostat.

Remote Installations

Model	Motor	Ice Melting Effect	Ice Cubes	Lbs.
J-5	¼ H.P.	50 lbs.	56	4.10
J-10	¼ H.P.	60 lbs.	84	6.15
S-12	¼ H.P.	90 lbs.	108	8.4
SS-20	¼ H.P.	110 lbs.	144	11.2

Puro Filter Corp. of America, 436 Lafayette St., New York, N. Y.
Mortimer H. Sloss, treasurer.

Mechanical Mfg. Co., Union Stock Yards, Chicago, Ill. Eastern Office, 30 Church St., New York.
Manufacturers of RED JACK metallic packing.

Strom Bearings Co., 4535 Palmer St., Chicago, Ill.
Manufacturers of ball bearings.
Henry K. Smith, pres.; A. C. Davis, vice-pres.; J. H. Walters, sec. and treas.; M. E. Monk, sales mgr.; J. Dlesk, supt.

Standard Steel and Bearings Co., Plainville, Conn.
Manufacturers of SRB Ball Bearings.
Henry K. Smith, pres.; A. C. Davis, vice-pres.; J. H. Walters, secy. and treas.; W. H. Hill, sales mgr.; J. E. Melson, supt.

Pittsburgh Store Sells Pure Foods and the Refrigeration for Them

The Zerozone display in Donahoe's Fifth Avenue store, Pittsburgh, advertised to be the "World's greatest food store." Fifteen years ago Donahoe's installed electric refrigeration to preserve their meats. They now offer this modern necessity to their established trade.

"PLEASE CHANGE MY ADDRESS"

Recent movements of Electric Refrigeration News subscribers as indicated by requests for changes in mailing addresses.

Austin, H. M., from Carrollton, Mo., to c/o: The Zerozone Kansas City Co., Kansas City, Mo.

Bidwell, Bruce, from 3417 Jempton Ave., Oakland, Calif., to 696 East Santa Clara St., San Jose.

Brady, J. F., from Little Ritz Apts., No. 6 S. 43rd St., to Chestnut Arms Apts., 31st and Chestnut Sts., Philadelphia, Pa.

Cain, H. A., from 2463 Harrison St., to 3733 Warwick Blvd., Kansas City, Mo.

Counts, E. G., from Y. M. C. A., Detroit, Mich., to Cleveland, Va.

Doty, H. E., from Seymour, Ill., to c/o: O. M. Doty, Decatur, Ill.

Eaton, J. O., from 7010 Chappell Ave., to 6814 Jeffrey Ave., Chicago, Ill.

Fatzinger, Harry E., from 3302 Magnolia Ave., Lynwood, Cal., to 4910 Seventh Ave., Los Angeles, Calif.

Grier-Sutherland Co., Woodward and Garfield Aves. to 432 E. Larned St., Detroit, Mich.

Guy, W. D., from 2051 Fort St., to 6555 Hamilton Ave., Detroit, Mich.

Gwyer, Herbert J., from c/o Iroquois New Rochelle Co., New Rochelle, N. Y., to 4488 Carol Place, Pelham Manor, New York, N. Y.

Jernberg, C. E., from Standard Forgings Co., Indian Harbor, Ind., to c/o Iron Mountain Co., Chicago, Ill.

Jordan, L. M., from 32 Market St., Plymouth, Mass., to 34 Borden St., Fall River, Mass.

Lynch, Roger S., from 37 Fairfield Ave., New Haven, Conn., to 153-19 Hillside Ave., Jamaica, N. Y.

McDonald, J. M., from 151 N. Michigan Ave. to 4252 N. Spaulding Ave., Chicago, Ill.

Rogers, A. C., from McKinney, Texas, to 3209 Knox St., Dallas, Texas.

Sahli, Bertram, from 112 Verplanck St., to 427 Johnson St., Buffalo, N. Y.

Sallee, F. O., from c/o Wayne Co., Fort Wayne, Ind., to 254 Spring St. N. W., Atlanta, Ga.

Shepherd, R. Linsley, from Room 406 Alabama Power Co. Bldg., Birmingham, Ala., to Electrical World, 10th Ave. at 36th St., New York, N. Y.

Wolfe, O. M., from 245 Mellwood Ave., to 4341 Dakota St., Pittsburgh, Pa.

ADDRESSES WANTED

Clifton Hayden, formerly of the Jamison Cold Storage Door Co.

W. M. Baxter, one time associated with the American Car & Foundry Co. and with Eskimo Pie Co., Louisville, Ky.

S. C. Martz, formerly at 26 Albion Place, Cincinnati, Ohio.

General Refrigerating Co., Portland, Oregon, street address wanted.

CONVENTION DATES

American Institute of Electrical Engineers, Winter Convention, New York City, Feb. 13-17. F. L. Hutchinson, Secy., 33 W. 39th St., New York City.

St. Louis Regional Meeting, St. Louis, Mo., March 7-9.

Baltimore Regional Meeting, Baltimore, Md., April 17-19.

New Haven Regional Meeting, New Haven, Conn., May 9-11.

American Oil Burner Association, Annual Convention, also exhibits, Chicago, April 3-5. Leod D. Becker, Secy., 350 Madison Ave., New York City.

Federated Radio Trades Association, Mid-winter Meeting, Milwaukee, Wis., Feb. 14-15. H. H. Cory, Secy., 301 Tribune Annex, Minneapolis, Minn.

International Association of Electrical Inspectors, Madison, Wis., March 17-18. Walter Wilke, Secy., 4211 Eiring Place, Milwaukee, Wis.

Iowa Engineering Society, Waterloo, Iowa, Feb. 8-10. J. S. Dodds, Secy., Box 202, Ames, Iowa.

National Fire Protection Association, Atlantic City, May 7-10. F. H. Wentworth, Secy., 40 Central St., Boston, Mass.

Northwest Electric Light & Power Association, Commercial Section, Portland, Ore., Feb. 20-21. J. C. Plankington, Secy., Northwestern Elec. Co., Portland.

Louisiana Electrical Exposition, New Orleans, La., March 5-10.

Mid-western Engineering & Power Exposition, Inc., Coliseum, Chicago, Feb. 14-18. George E. Pfisterer, Secy., 53 W. Jackson Blvd., Chicago.

INDEX OF ADVERTISERS

INSTITUTE SUBJECTS MACHINES TO SEVERE TESTS BEFORE OKAY

Technical and Kitchen Service Tests Applied to All Units

In an article entitled, "For Refrigeration All the Year Round," which appeared in a recent issue of the *Good Housekeeping Magazine*, the rigid tests to which each machine is subjected before it is entitled to carry the seal of the institute are described.

The article is begun with the statement that "It has been estimated that not more than 40 per cent of the homes in the United States are enjoying the benefits of refrigeration." This is followed by the even more significant statement that "Not more than 17 per cent of such homes use their refrigerators through the winter months." This practice of discontinuing the use of the refrigerator during cold weather is discouraged by the Good Housekeeping Institute.

The use of window boxes and other contrivances for keeping foods cold is also discouraged, because of the fluctuation in outside temperatures. Electric refrigeration is the most satisfactory means of maintaining desired temperatures throughout all months of the year. Manufacturers have been aided in the perfection of their machines through the co-operation of the Good Housekeeping Institute. The following description gives some idea as to the rigidity of the tests to which electric refrigerators are subjected in the Institute:

The Mechanical Test

"The mechanical refrigerator is given a technical test and a kitchen service test. In the mechanical test we determine the power consumption at different room temperatures, variation in temperature maintained in the food compartment and ice tray, throughout the cycle of operation, the frequency and duration of the operating period, and the capacity of the unit for the work it has to do, as indicated by the percentage of the total time that it operates at different room temperatures. A continuous record showing the operating characteristics is made on the chart of a recording meter, and this record is examined each day for indication of any defect that may develop, particularly under the heavier load that prevails at the higher room temperature.

"Before starting the technical test, the unit is run for a few weeks to give the operating parts an opportunity to become worn in, and necessary adjustments are made to the control to maintain the desired food compartment temperature. The test is then run for a few weeks in a room maintained at a constant temperature of 80 degrees Fahrenheit. During all that time temperature and power readings are taken hourly. At the higher room temperature any major defect is very apt to develop quickly, and should such occur the test is discontinued.

The Kitchen Test

"In the kitchen service test the unit is used for several months just as it would be in the home. During that time daily readings of power consumption are taken and the average room temperature for each day is determined from the chart of a recording room thermometer. A daily record is also kept of the temperature in the food compartment and in the ice trays to ascertain the reliability of the device. We note carefully any servicing that may be required as a result of prolonged use of the unit, in order to learn if there is any defect in the design or construction of any part of the device. The daily record of kitchen performance also furnishes interesting data concerning the operation of the machine. These figures show that the power consumption of any given refrigerator and unit varies not only with the room temperature, but also with the extent to which the refrigerator is used.

"The Institute is often asked what it costs to operate a mechanical refrigerating unit. Under our conditions of kitchen use, a refrigerator of seven-cubic-feet food compartment volume will consume about 1¾ kilowatt hours per day when the average room temperature for the day is 75 degrees Fahrenheit.

THE CONDENSER

A CLASSIFIED COLUMN OF OPPORTUNITY

REPLIES to box number advertisements should be addressed to Electric Refrigeration News, 554 Maccabees' Bldg., Detroit, Mich.

ADVERTISING RATES—this column only:

POSITIONS WANTED (special rate if paid in advance): 50 words or less, one insertion, $2.00, additional words 4 cents each. Three insertions, $5.00.

POSITIONS AVAILABLE, For Sale, Business Opportunities, and all other classifications (special rate, if paid in advance): 50 words or less, one insertion, $3.00, three insertions $8.00, additional words, 5 cents each.

LINE RATE (open account): 50 cents per line.

POSITIONS WANTED

SALES EXECUTIVE

Sales Executive desires connection. Experience consists of field, field supervision and sales promotional work with splendid record as to performance. Preference is indicated as branch manager or sales manager working in Florida or Southern territory. Box 61.

Chief Engineer available, connected with leading electric refrigeration concerns past eight years. Inventor and owner of patents on thermostat control and seals. Well acquainted with patent situation. Experienced designing engineer. Box No. 52.

Service Engineer, domestic and commercial electric refrigeration. Qualified to take charge of service and installation departments including stock, supply and cost records. Over 12 years experience handling service work in mechanical lines. Preference Kelvinator-Nizer. Box No. 63.

SPECIAL SERVICE

"Installation, repairs, service, household and commercial refrigerating machines, in New York City and vicinity only. Prompt and efficient service to manufacturers and individuals. Electric Refrigerator Service Co., 159 East 60th Street, New York City."

Good positions have been secured through this column. Try it.

REQUESTS FOR INFORMATION

The following inquiries have been received by ELECTRIC REFRIGERATION NEWS. Readers who can supply information on these subjects are invited to write at once, referring to the Query number.

Query No. 52—"If possible, please furnish us with a list of manufacturers producing a commercial compressor using sulphur dioxide as a refrigerant."

Query No. 49—"We would very much appreciate it if you could give us some idea as to the earnings for 1926, of as many or all of the manufacturers of refrigerator cabinets as possible."

Query No. 48—"Will you kindly put me in touch with concerns manufacturing a good one and two cylinder compressor for domestic refrigeration units, also a good float valve evaporator?"

Subscription Order

BUSINESS NEWS PUBLISHING CO.
554 MACCABEES BLDG.
DETROIT, MICH.

Gentlemen:

Please enter my subscription to ELECTRIC REFRIGERATION NEWS, the Business Newspaper of the Electric Refrigeration Industry.

United States: ☐ $1.25 per year ☐ Two years for $2.00.
Foreign Countries: ☐ $1.50 per year.

I am enclosing payment in the form of

☐ Check ☐ P. O. Order ☐ Cash ☐ Stamps

Name _____

Street Address _____

City and State _____

Remarks: _____

☐ NOTE: If it is inconvenient for you to enclose payment with this order, check this square and invoice will be mailed. Do it now, while you have the blank before you. It will save the time and trouble of writing a letter and you will be sure to get the next issue.

ELECTRIC REFRIGERATION NEWS

The business newspaper of the electric refrigeration industry

VOL. 2, NO. 12, SERIAL NO. 36 | DETROIT, MICHIGAN, FEBRUARY 15, 1928 | Entered as second class matter August 1, 1927, at the Post Office, Detroit, Michigan. | PRICE TEN CENTS

COPELAND SHOWS LINE OF 32 MODELS AT SALES MEETING

New Silica Gel Process Explained to Distributors

Tremendous strides in the electric refrigeration industry in the coming few years were predicted at the convention of Copeland Products, Inc., distributors, at the Book-Cadillac Hotel, February 8 and 9. Copeland's new line of de luxe refrigerators, the new commercial units and the long heralded silica gel process were introduced and received with marked enthusiasm by the 200 distributors present from all over the United States and many parts of Canada.

Showed Net Profit In 1927

Opening the convention in the main ballroom of the Book-Cadillac Hotel, W. D. McElhinny, vice-president in charge of sales, introduced W. R. Wilson, president of Copeland Products, Inc., who, in his keynote speech, declared that the company would show a substantial net profit for 1927 and predicted even better returns in 1928.

"Copeland," said Mr. Wilson, "by carefully sensing business trends, has not only kept out of the red, but has shown increasing gains. We have avoided overproduction and our policy might be summed up in these words—to produce machines that are new, beautiful and sound, and represent the greatest possible value for the money."

The new Copeland line, comprising 32

(*Continued on Page 2, Column 2*)

DETROIT REFRIGERATION MEN FORM ASSOCIATION

Announcement is made of the formation of the Electric Refrigeration Association of Michigan, an organization of Detroit electric refrigeration men formed for the purpose of providing a personal contact and promoting a better understanding among the people connected with the distribution of electric refrigeration in the city.

At the third meeting of the organization held on February 6, officers were elected as follows: D. P. Dalrymple, Dalrymple-Kelvinator Co., president; G. J. Daniels, Norge-Daniels Co., vice-president; Godfrey Strelinger, Strelinger-Copeland Co., secretary-treasurer. The board of directors includes the officers just named with the following additions: E. E. Rouech, Detroit Frigidaire Branch; A. L. McCormick, Electric Utilities Corp. (General Electric); Charles E. Feinberg, Detroit Absopure Branch; and A. H. Meinke, Universal Cooler.

At the present time there are in the organization seven members. Each of these seven members is privileged to appoint two associate members from his organization. These will in most cases include the sales managers of the retail and wholesale departments. The association maintains an office in the Curtis Building, 2842 West Grand Blvd., Detroit. Regular meetings are scheduled for once a month, but at the present time the board of directors is meeting once each week in order to take care of the many details incident to the formation of the new organization.

9 DEALERS ORGANIZE LOCAL ASSOCIATION IN MILWAUKEE, WIS.

A new organization of electric refrigeration dealers, not yet officially named, has been formed in Milwaukee, for the purpose of improving conditions in the trade, for the exchange of business ideas and to promote a better acquaintance among members of the industry.

At the first meeting of the organization J. W. Hill of the Kelvinator branch office and one of the oldest electric refrigeration men in the city, was elected president. Other officers elected included F. A. Jones, manager of the refrigerator department of the three Schuster stores which handle Servel refrigerators, as vice president, and C. E. Cramer of the Zerozone Wisconsin Co., secretary and treasurer.

Mr. Hill, who initiated the movement, sent invitations to fifteen men representing nine different dealers, all of whom attended the meeting. Meetings will be held regularly the second and fourth Tuesday in each month and plans are being made for a joint meeting of the salesmen of all organizations periodically. The next meeting will be held February 27, at which time a name for the organization will be selected.

C. E. Jernberg

C. E. JERNBERG HEADS ZEROZONE

Owing to the rapid growth in sales and production of ZeroZone Electric Refrigerators, manufactured by the Iron Mountain Company of Chicago, C. E. Jernberg, its president, will actively take over personal supervision of the business.

Mr. Jernberg has completely surrendered his duties as secretary and works manager of the Standard Forgings Company, Indiana Harbor, Indiana, to take personal charge of ZeroZone's operations. In his twenty-one years with the Standard Forgings Company, Mr. Jernberg had an important share in developing a small forging shop into one of the leaders of the industry. He knows large scale manufacture and production from the ground up, and brings most valuable practical experience to the Iron Mountain Company, formed twelve years ago by himself and his brother, C. R. Jernberg.

L. W. WARD APPOINTED HEAD OF NORGE SALES

The Norge Corp., of Detroit, announces the appointment of L. W. Ward as general sales manager, effective February 1. Mr. Ward was formerly president of the Ward Electric Refrigerator Co., Buchanan, Mich., and more recently sales manager of the Absopure Frigerator Division of the General Necessities Corp.

$40,000,000 SALES IN THREE MONTHS FRIGIDAIRE GOAL

New Models and Prizes to Quota Club, Feature Opening of Tour Series

Budgets for sales totalling $8,000,000 to be made in the next three months were handed in by dealers and distributors at the Frigidaire regional convention at Dayton, Ohio, February 2. Basing his calculations upon this figure, E. G. Biechler, president and general manger of the Frigidaire Corp., stated that $40,000,000 worth of business would be the goal for the entire country for the same period.

Pledges for the coming year's business were also handed in, of which Detroit offered $3,000,000; Huntington, $1,500,000; Pittsburgh, $4,500,000; Cleveland, $3,000,000; Cincinnati, $1,500,000; and Dayton promised to beat its past record by $1,000,000.

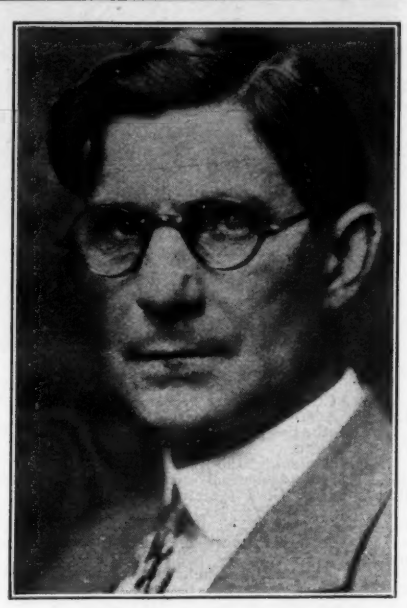
The convention which was held at the Victory Theatre, was opened at 10:30 Thursday morning with the singing of America, followed by invocation by Rev. Phil Porter, rector of Christ Episcopal Church, Dayton. J. A. Harlan, household sales manager, introduced R. F. Callaway, assistant to Mr. Biechler. Mr. Callaway outlined the plan of Frigidaire Corp. for reaching every man in its selling organization through this series of regional conventions, the first of which was opened in Dayton.

Quota Club Men Get $100 in Gold

Mr. Callaway then called on the members of the 1927 Quota Club, an organization for those who achieved or exceeded their sales goals last year, to march to the stage and each receive $100 in gold as a reward for their achievement. Each man was also presented with a pin indicating his membership in the Quota Club. Immediately after the handing out of these awards from a large iron-studded chest, there was a call to "fill the treasure-chest." Baskets with orders for Frigidaire products were passed to the stage and dumped into the chest.

Following a summing up of Frigidaire history in the past six years by Mr. Callaway, the details as to the refinements in Frigidaire products during the past year were given by L. S. Keilholtz, chief engineer. T. B. Fordham, works manager, announced that $1,000,000 has been spent by the organization in the past year in improving production methods. Mr. Fordham stated that plant rearrangements have been completed for the production of the new line of porcelain tu-tone cabinets which were placed on display before the convention. Other new Frigidaire prod-

(*Continued on Page 13, Column 2*)



R. M. Douglass

NAMED DIRECTOR OF ADVERTISING

C. K. Woodbridge, president of the Electric Refrigeration Corp., Detroit, announces the appointment of Ralph M. Douglass as director of advertising, effective February 1st.

Mr. Douglass became associated with the organization in 1926 as assistant in the advertising department and has since risen rapidly to his present position.

Owen Young Guest of Honor At Dartmouth Alumni Banquet

Owen D. Young, chairman of the board of the General Electric Company, was guest of honor at the annual alumni dinner of Dartmouth College held at the Hotel Biltmore, New York City, January 31st.

J. F. PLUMMER DIRECTS SALE OF ALLISON UNIT

The Domestic Electric Refrigerator Corp., 2 West 46th Street, New York City, announces the recent appointment of John F. Plummer as vice-president and general manager. Mr. Plummer was president of the Tide Water Oil Sales Corp., from 1920 to 1926. He has more recently been first vice-president of the Magazine Repeating Razor Co., manufacturers of the Schick Razor, and is said to be largely responsible for the success of this new enterprise.

CABINET MAKERS DISCUSS PROBLEMS OF INSULATION

Lively Interest Shown in Detroit A. S. R. E. Meeting

That the Detroit section of the American Society of Refrigerating Engineers provides the common meeting ground for the discussion of problems affecting the development of electric refrigeration, was again demonstrated at a well attended meeting at the Detroit Engineering Society's Building, 478 West Alexandrine St., Monday evening, February 13, at which the water proofing of domestic refrigerator cabinet insulation was the principal topic of discussion.

George B. Bright, president of the National Association, and David L. Fiske, national secretary from the headquarters office at 37 W. 39th St., New York City, were present. Patterson Farmer, president of the Universal Cooler Corp., was chairman of the meeting. The program was arranged by C. F. Belshaw, chairman of the program committee. Representatives of household refrigerator manufacturers from all parts of the country were in attendance and evidenced a keen interest in securing all possible information which would assist them in improving their product to meet the needs of electric refrigeration service and give the consumer the highest value in cabinet efficiency and dependability.

The first speaker, J. F. Bracken, manager of the refrigeration insulation division of the Celotex Co., Chicago, reviewed the history of ice box development and pointed out that the family ice box was derived from the furniture industry. In the early days, boxes were produced where cheap lumber was available and little was known about scientific construction. The electric refrigeration industry, according to Mr. Bracken, has been derived from the automobile industry, whereas the professional element, represented by well known refrigerating engineers present at the meeting, has been a product of the cold storage industry. It is in the latter field that the most elaborate studies have been made to determine scientifically correct principles. The enormous capital investment in cold storage building and equipment have necessitated the utmost attention to economical operation in its relation to first cost.

W. A. Drushel, director of research of the Haskelite Manufacturing Co., Grand Rapids, Mich., next presented a paper calling attention to the heat losses which result from the absorption of moisture in the wood corner posts and frame work of the ordinary household refrigerator. Figures were given based upon tests of 5 and 7-cubic foot models of various makes.

Charles O. Duevel, Jr., representing the Knox Products Co. of Pittsburgh, Erie Art Metal Co. and Erie Metal Furniture Co., of Erie, Pa., followed with a treatise

(*Continued on Page 2, Column 1*)

G. E. DEALERS FROM KANSAS AND MISSOURI MEET AT KANSAS CITY

W. J. Daily, sales promotion manager, and L. R. Edwards, advertising manager, of the General Electric Co., electric refrigeration Department, Cleveland, attended a meeting of Missouri and Kansas distributors of General Electric refrigerators at Kansas City on January 27th.

In addressing the group, Mr. Daily said that in the Kansas City section, families with annual incomes as low as $1,800 were buying electric refrigerators and, taking the United States generally, the family with a minimum income of $2,500 is becoming an electric refrigeration purchaser.

Mr. Edwards said that his company expects to spend $3,000,000 in advertising in 1928 through five mediums, namely, trade magazines, newspapers, direct mail, outdoor, and store display. "Kansas City offers us a potential market of 19,000 homes," said Mr. Edwards. "That is one-fourth of the total number of homes in the city. There are about 3,000 electric refrigerators of all makes in Kansas City at present."

About 100 distributors attended the meeting, which was held in the Medical Arts Building, Thirty-fourth and Broadway. A dinner was held in the evening at the University Club.

M. A. Gleuck, local distributor for the General Electric Company, presided at the meeting, at which talks were given in addition to those by Mr. Daily and Mr. Edwards, by P. B. Zimmerman, sales manager from Cleveland, and Fred Sarchet, of the engineering department, Schenectady, N. Y.

The Never-Failing Appeal of the Ice Cube

(See story on Page 6)

Frigidaire Water Coolers in the Foreground of the Brown Electric Co. Store at Columbus, Ga.

WATERPROOFING OF INSULATION SUBJECT OF A. S. R. E. SESSION

(*Continued from Page 1, Column 5*)

on water-proofing methods for corkboard and other insulating materials.

Gale Pearce, of the Dry Zero Corp., Chicago, presented an interesting picture of recent laboratory research into the microscopic characteristics of various materials and their relation to heat insulation values. He described the results of tests to determine the variation of heat resistance with the degree of compression of various fibrous substances.

Among those who contributed to the discussion after the formal program, were Charles Gibson, president of the Gibson Refrigerator Co., Greenville, Mich.; Ruben E. Ottenheimer, president of Ottenheimer Bros., Baltimore, Md.; F. A. Wegener, chief engineer of the Welsbach Co., Gloucester, N. J.; R. P. Farrington, vice-president of the Heintz Manufacturing Co., Philadelphia, Pa.; H. L. Grimm, of the American Refrigerator Corp., Peru, Ind., and F. M. Ranney, Ranney Refrigerator Co., Greenville, Mich.

It was agreed among those present that water proofing is highly essential to the continued efficiency of any insulating material after the refrigerator is put in service under the constantly changing humidity conditions of the home. The great variation in humidity in the southern states was pointed out as the reason for many difficulties in producing boxes which would stand up and give satisfactory service in this territory. F. A. Wegener, of the Welsbach Co., described an innovation which has been adopted by his company consisting of a ventilating outer shell approximately half inch beyond the refrigerator proper which permits a downward circulation of air alternately condensing and evaporating the moisture from the air. This design, they find, keeps the outer shell always dry and eliminates difficulties with exterior finish.

Attention was called to the tendency of salesmen to refer to all cabinets as being insulated with corkboard, regardless of the actual material used. The thought was suggested that this is due more to lack of knowledge on the part of the salesmen than to any intention to deceive the customer. There has been a feeling, it was said, that corkboard represents the standard and that the use of any other material introduces a question as to the quality of the box. The belief was expressed that the public knows little or nothing about insulation and that the producers of other insulating materials should educate the industry to the merits of their product.

Approximately 100 members and guests attended the meeting. A complete record was not secured, but following is a list of those who signed the register:

C. C. Bupp, Kelvinator Corp., 8623 Dumbarton Rd., Detroit.
A. D. McCaughna, Leonard Refrigerator Co., 532 Prospect Ave., S. E., Grand Rapids, Mich.
R. C. Kent, Leonard Refrigerator Co., 552 Lafayette Ave., S. E., Grand Rapids, Mich.
C. C. Fraun, 341 Richard Terrace, Grand Rapids, Mich.
Milo Bailey, Kelvinator Corp., 1728 Field Ave., Detroit.
Wm. N. Schutte, Knox Products Co., 1906 Boulevard, Wilmington, Del.
P. L. Hanson, Heinz & Munschaner, 20 Superior St., Buffalo, N. Y.
R. E. Ottenheimer, Reol Refrigerator Co., Baltimore, Md.
C. F. Belshaw, George B. Bright Co., Detroit, Mich.
David L. Fiske, A. S. R. E., 37 W. 39th St., New York, N. Y.
Patterson Farmer, Universal Cooler Corp., 8905 E. Jefferson Ave., Detroitt.
W. H. Knoblock, Erie Art Metal Co. & Erie Metal Furniture Co., 351 W. 6th St., Erie, Pa.
H. A. Hedlund, Erie Art Metal Co. & Erie Metal Furniture Co., Ferncliff, Erie, Pa.
Ray P. Farrington, Heintz Manufacturing Co., Front and Olney Sts., Philadelphia, Pa.
F. A. Wegener, Welsbach Co., Gloucester, N. J.
Charles O. Duevel, Jr., Knox Products Co., 310 House Bldg., Pittsburgh, Pa.
Harry C. Hayes, General Necessities Corp., 2011 Park Ave., Detroit.
Anton F. Greiner, Consulting Engineer, Boyce Bldg., Detroit.
Theo. Wittleman, Detroit Ice Machine Co., 2480 Baldwin Ave., Detroit.
E. R. Hammond, Crystal Refrigerator Co., Fremont, Nebr.
Ray M. Martin, Kelvinator Corp., 7545 Dunedin Ave., Detroit.
H. G. Chamberlin, Flintlock Corp., 6390 Tuxedo Ave., Detroit.
H. A. Turner, Kelvinator Corp., 2162 Montclair Ave., Detroit.
R. T. Ashton, Kelvinator Corp., 68 W. Francis St., Dearborn, Mich.
D. G. Ellis, Kelvinator Corp., 1597 Pennsylvania Ave., Detroit.
C. H. Tanjer, Kelvinator Corp., 206 S. Marlborough, Detroit.
Gale T. Pearce, Dry-Zero Corp., 130 N. Wells St., Chicago, Ill.
Harold L. Pope, Kelvinator Corp., 13730 Dexter Blvd., Detroit.
Harold L. Pope, Jr., Packard Co., 13730 Dexter Blvd., Detroit.
R. M. Hyde, McCord Radiator & Mfg. Co., 10659 Welland Ave., Detroit.
A. A. Anderson, 31 Colonial Ave., Springfield, Mass.
F. S. Gibran, Jr., Gibson Refrigerating Co., Greenville, Mich.
L. V. Whitney, Gibson Refrigerating Co., Chicago, Ill.
C. W. Johnson, 510 N. Dearborn St., Chicago, Ill.
Charles J. Gibson, Gibson Refrigerator Co., Greenville, Mich.
S. J. Harry, Kelvinator Corp., 14169 Prevost Ave., Detroit.
Wm. J. L. Smith, Kelvinator Corp., 8053 Wisner St., Detroit.
J. Josaitis, Kelvinator Corp., 3344 Grand Ave., Detroit.
H. J. Moore, Electric Refrigeration News, 640 Delaware Ave., Detroit.
Roger K. Braun, Kelvinator Corp., 70 W. Euclid Ave., Detroit.
John Wyllie, Jr., Kelvinator Corp., 5922 Maxwell Ave., Detroit.
G. J. Pieire, Detroit Edison Co., 69 Seward Ave., Detroit.
A. D. McLay, Detroit Edison Co., Detroit.
V. W. Crone, General Necessities Corp., 14030 Hubbell Ave., Detroit.
Max Rothenberg, White Seal Refrigerator Co., 506 Lafayette.
C. E. Ganison, 2125 S. Saginaw St., Flint.
A. E. Cole, General Necessities Corp., 367 Rivard Blvd., G. P., Detroit.
F. M. Ranney, Ranney Refrigerator Co., Greenville, Mich.
H. J. Potter, Pitmans & Dean Co., 349 Manistique N., Detroit.
W. A. Drushel, Haskelite Mfg. Corp., Grand Rapids, Mich.
F. M. Cockrell, Electric Refrigeration News, 554 Maccabees Bldg., Detroit.
E. Hubacker, Norge Corp., 4503 Oregon Ave., Detroit.
Frank Trese, Frigidaire Corp., 8367 Colfax Ave., Detroit.
H. L. Grimm, American Refrigerator Corp., Peru, Ind.
B. R. Foster, Lansing Ice & Fuel Co., E. Gier St., Lansing, Mich.
G. R. Grinold, Lansing Ice & Fuel Co., 1620 W. Shiawassee, Lansing, Mich.
Geo. H. Kittredge, Detroit City Service Co., Detroit.
R. C. Doremus, Geo. B. Bright Co., Detroit.
A. Hafke, Kelvinator Corp., 3305 Gratiot Ave., Detroit.
C. B. Leeson, Kelvinator Corp., 121 Harrison, Detroit.
W. A. Kuenzli, Kelvinator Corp., Wilshire Hotel, Detroit.
E. O. Harbeck, Challenge Refrigerator Co., Grand Haven, Mich.
R. W. Davenport, C. P. T. Co., Detroit.
H. S. Estler, C. P. T. Co., Detroit.
E. C. Wahl, Leeds & Northrup, 2936 Glendale, Detroit.
L. E. Rollins, Weston & Ellington, Archs. & Engrs., 2550 Monterey, Detroit.
T. J. Gillam, Groh Corp., 1839 E. Grand Blvd., Detroit.
Glenn Muffly, Copeland Products, Inc., 630 Lycaste, Detroit.
Geo. B. Bright, George B. Bright Co., 2615 12th St., Detroit.
J. H. Bracker, The Celotex Co., 645 N. Michigan Ave., Chicago, Ill.
Wm. C. Hill, Universal Cooler Corp., 1453 Hubbard Ave., Detroit.
R. H. Stewart, Kelvinator Corp., 9308 Sorrento, Detroit.
T. R. West, Rice Products, Inc., Detroit.
F. B. Riley, Standard Refrigerator Appliances, 320 Beaubien St., Detroit.

COLORED CABINETS SHOWN AT COPELAND SALES CONVENTION

(*Continued from Page 1, Column 1*)

models of the domestic type and others in the commercial field, was unveiled by Mr. McElhinny at the opening session in a manner which showed him to be a master of stagecraft. Outlining the progress of the past two years in pushing the domestic line alone, he said: "In these years you distributors have had to make your domestic line bear the whole overhead. Nevertheless Copeland has forged ahead. But now you have it—" and as he said this he dramatically switched aside the curtain and showed a complete multiple unit installation on the stage. These are now in full production at the Copeland factory.

Unique Plan for Interchangeable Colors

After exhibiting the new Seeger line of all-porcelain cabinets in three colors, cirrus gray, green and yellow with a modulated marble effect, and a new five-foot all-porcelain model, Mr. McElhinny sprung the big surprise of the convention—the new de luxe models in six optional and interchangeable colors. Explaining that Copeland had recognized the growing color vogue in kitchen equipment, he pointed out that the colors might be changed at will. This is done by means of a removable top and grill fronts, which are colored. These are provided in red, green, gray, yellow, blue and cream, and are interchangeable at a moment's notice.

In addition to this, the new de luxe models are equipped with electric lights so that the entire interior of the refrigerator is illuminated by the mere turning of a switch between the doors. A warning light also burns on front through an artistically designed prism, to guard against leaving the light on when not needed. These refrigerators are priced at from $310 to $720, F. O. B., Detroit.

The de luxe line are of porcelain construction outside as well as in and insulated with from three to four inches of solid cork. They are equipped with two double tray ice drawers. The largest model, a box 20 cubic feet food storage space, is equipped with ten ice trays, including four double-depth drawers for freezing desserts. They will freeze a total of 378 ice cubes at one freezing with a total weight of 24½ pounds.

That the company is equipped to cover the entire field of electric refrigeration was shown by the exhibition of the N-5 model, which sells for $195, f. o. b., Detroit, and has a capacity of five cubic feet and will make 108 ice cubes at one freezing. It has a double depth ice drawer, and is equipped with a built-in unit at the base. This may be changed for a remote control installation and a vegetable bin substituted if wished. This model is lacquer finished on steel. A cabinet of similar size with porcelain interior and metal (super Ascolay) front lists at $225.

This is followed by a 7-foot porcelain-lined metal finished cabinet freezing 162 cubes or 10.6 pounds of ice, listing at $290, and a nine cubic foot model similarly finished at $365. These were followed by the Copeland Seeger all-porcelain line with models ranging from five to 16 cubic feet, and the Copeland de luxe color line ranging from 5 to 32 cubic feet as referred to before.

Production and Service Policies Outlined

E. W. Barger, service manager, in outlining the company's service plans, said that Copeland looked upon the right kind of service as the means of building good will which would naturally lead to increased sales.

George W. Mason, vice-president and general manager, pointed out that while electric refrigeration was still an infant industry, it was now reaching the point of stabilization and that there is no longer any uncertainty in the operation of electric refrigerators.

"The development has been greater in the factory than the public realizes," he said. "Engineers are always ahead of the public knowledge, but they prefer to release their developments slowly, rather than rush things into production which might not 'get across.' The public will know more and more about electric refrigeration just as the public is now pretty well versed on the subject of automobiles. They are not fooled about values. They know how to appraise real value in autos and they are learning fast about electric refrigeration. They are buying carefully, analytically and demanding specific information."

A. M. Taylor, advertising manager of the Copeland Products, Inc., outlined the advertising program for 1928, pledging full national co-operation to back up the field men, and J. H. Neebe, of the Campbell-Ewald Co., Detroit, advertising counsel for the Copeland Company, told of what the agency is doing to push the sales of Copeland products.

Silica Gel Process Explained

On the concluding day of the convention the visitors were shown the new silica gel system of refrigeration, which was explained to them by C. Wilbur Miller, president of the Davison Chemical Company of Baltimore, and Ernest B. Miller, vice-president of the Davison Chemical Company, which produces silica gel. An exhibit was arranged and the machines shown in actual operation.

It was explained that the Copeland company was planning to start manufacture of these machines in a very short time.

The convention wound up with a banquet in the main ballroom of the Book-Cadillac at which Charles W. Hadden, of the Copeland executive staff, presided.

New DeLuxe Models Staged for Copeland Distributors

Milwaukee Electric Railway Offers Ultra Modern Diner Service

The Milwaukee Electric Railway & Light Co. recently started running from Milwaukee to Watertown, a distance of 50 miles, what is believed to be the first all electrically operated dining car in the country. The car is part of a two-coach articulated train. The passenger coach, equipped with individual, genuine leather seats, is permanently joined to the dining coach.

The diner train is operated on a schedule that provides direct connection with motor buses running to and from Madison, the state capital, and is proving increasingly popular.

The dining compartment, which seats 16 persons comfortably, is 100 per cent electrically equipped. It is furnished with steel wall tables, and aluminum frame, spring cushioned dining chairs upholstered in leather. The interior is finished in beautiful greens and gold with indirect overhead and side lighting.

The kitchen in which the food is stored and cooked electrically, boasts of a good-sized Kelvinator refrigerator. It has room for five gallons of ice cream, a large number of ice cubes, milk storage compartments and a water cooler.

The refrigerator motor is 500 volt series-wound, direct connected to a model L. B. Kelvinator air-cooled compressor. The entire refrigerating equipment is suspended below the car, encased in a compartment, providing ready access for servicing.

Three meals a day are served from this kitchen with a competent steward in charge. An electric percolator, range, broiler, and toaster and dish washer are also included in the kitchen equipment.

Leaflet Features New Electric Service to Patrons

Okmulgee Furniture Company Takes on Kelvinator Line

The Okmulgee Furniture Company, 207 East Sixth Street, Okmulgee, Okla., has added Kelvinator electric refrigeration to its line. C. A. Fahnestock, who has been in electric refrigeration sales work for the past two years, has been engaged to take charge of the new department. Mr. Fahnestock, who was formerly associated with the McCracken-Mitchell Hardware Co., Okmulgee, has recently returned from the Kelvinator plant at Detroit, where he spent some time in studying installation and servicing.

Electric Refrigeration Sales Discussed at Southern Utility Meeting

A Kelvinator demonstration was included as a part of the program at a meeting of executives and salesmen of all properties of the Southwestern Gas & Electric Company, held at Shreveport, La., January 23-24. The purpose of the meeting was to outline the sales policy of the company for 1928 in reference to the sale of electric power and light, of electric refrigerators and other appliances.

Albany Frigidaire in New DeWitt Clinton Hotel Building

The Frigidaire Corporation has leased one of the stores in the new DeWitt Clinton Hotel builing, Albany, N. Y. The store, on Eagle Street, second from the corner of State Street, is being used for the display of Frigidaire units, including the new models recently announced.

NEW YORK A. S. R. E. ELECTS OFFICERS AT JANUARY MEETING

Stephen Bennis Continues as President

The January meeting of the New York Section of the American Society of Refrigerating Engineers was held Wednesday evening, January 25, at the Machinery Club, 50 Church Street, New York City. Fifty-six members and guests were present at this meeting.

The nominating committee presented the names of Stephen Bennis for president, A. Crawford Craig, vice-president and James Larkin for secretary. These nominations were accepted as presented.

The speaker of the evening, Charles Neeson of the Electric Bond & Share Co., gave an interesting discussion of "A New Type of Ice-Plant Building Design." Mr. Neeson presented a combination of new features relative to a standardized type of refrigerating plant that has worked out very well in the South by means of which a great deal of engineering work is saved and economy effected through the use of this particular type of building construction.

Among other things, Mr. Neeson mentioned that it has proved quite an advantage to use cinders as an insulating surface for the floor instead of cork and other types of materials. A rather new departure from the general design was the placing of the brine tank directly over the freezing rooms without any insulation at the bottom of the tank. The freezing rooms at the side of the tank are insulated by cork put on the outside of the building, this cork then being surrounded by hollow tile or brick facing. A feature of this type of construction, it was stated, is its flexibility for future growth, permitting additional equipment to be added to the plant at a comparatively small cost. Lantern slides were used to give a clearer conception of this new type of construction.

Following Mr. Neeson, President Bennis then introduced Francis Bustillo of the National Institute, who gave a short talk on business pyschology, and with his associate, Donald R. Pegan, gave a practical demonstration of this work. Mr. Pegan, who had been previously introduced to all of the members, was able to call off immediately the name of each one present, demonstrating, in a remarkable way, what can be done in cultivating the mind.

ROCHESTER DISTRIBUTOR IS HOST TO G. E. DEALERS

Seventy-five dealers, operating under the Wheeler Refrigerating Corp., Rochester, New York, were guests of that company at a meeting held at the Rochester Club on February 2nd. Open house and registration took place at the showrooms of the Company at 33 St. Paul St., in the morning. Luncheon at the Rochester Club at noon was followed with a program which was opened with a talk by Mr. Wheeler. During the afternoon, talks were given by representatives of the General Electric Co. at Cleveland, and an actual demonstration, showing the methods used in presenting the product to a prospect was presented in the form of a play by members of the Wheeler organization. Dinner was served at 6 o'clock and the program was concluded with further talks.

Ferro Enamel Appoints Eastern and Western Sales Managers

The Ferro Enamel Supply Co., Cleveland, Ohio, announces the appointment of B. H. Hale of Albany, New York, as eastern sales manager, and J. A. Rumer of Chicago as western sales manager.

REFRIGERATION BY SILICA GEL PROCESS TO BE MARKETED

Capillary Attraction Actuated by Gas Heat, Secret of New Method

Harnessing the forces of capillary attraction, silica gel, which has been characterized as akin to electricity in its possibilities, is now to be turned to the uses of refrigeration, carrying on where electric refrigeration leaves off. This became known at the convention of the Copeland Products, Inc., distributors, at the Book-Cadillac Hotel, February 8 and 9, when it was announced that Copeland was about to begin manufacture of this type, for which it holds certain exclusive sales rights.

How this force has been harnessed was explained by C. Wilbur Miller, president of the Davison Chemical Company and the Silica Gel Corporation of Baltimore, and his brother, Ernest B. Miller, vice-president in charge of operation. Refrigerators from the big walk-in type down to smaller units, display cases and a large soda fountain were shown in actual operation at an exhibit which was arranged by Copeland.

Through the use of silica gel, it is possible to dispense with a compressor and its motor. The silica gel, contained in steel tubes, is used to maintain the cycle of the refrigerant. Through its capillary attraction the silica gel sucks up, or absorbs, the refrigerant. Heat is then applied to return the absorbed refrigerant from the silica gel.

This is done through a gas burner. A time clock automatically starts the gas burner operating and then shuts it off at the proper time. As the gel frees itself of the refrigerant, this refrigerant passes back into a cooling chamber just the same as in the electric type of refrigerator.

The silica gel, Mr. Miller explained, will last a life time and there is no necessity for renewing the supply. Its use practically eliminates all moving parts and the necessity of lubrication.

Addressing the convention, C. Wilbur Miller let the visitors in on a little of the inside story of silica gel and the romance that lies behind this new substance, saying in part:

"In bringing out an entirely new principle, one is going to live or die on its initial performance. If a new substance is brought out and does not live up to what it has been represented, it faces a hard road. And so we have been going slowly with silica gel. We have spent something like $4,000,000 in research work. But now we are sure of our ground and we have nothing to fear.

"The first silica gel refrigerator manufactured I installed in my home six years ago. It is still in operation and has not varied more than 5 degrees in all that six years. But the silica gel refrigerators we make now are 1700 per cent more efficient than is that one in my home.

"Picture a compressor type refrigerator installed in a railroad car. Picture what all the jolting and switching bangs would do to that mechanism. But we have a refrigerator car in operation with the silica gel process and it is a success. It has been running since May. We loaded it in Florida with oranges when the temperature of the outside of the car registered 122 degrees. Those oranges were delivered in New York at just the temperature desired and with no spoilage.

"We then loaded the car at Buffalo with meat for Kansas City and delivered the meat without any change in its temperature. The next point it was sent to was Colorado, where cantaloupes were loaded and delivered in New York, where the temperature of each melon ranged from 39 to 39.4 degrees.

"In Connecticut they have been shipping fish, but it has always been necessary to reload and re-ice at St. Louis with a consequent big loss. We loaded a car of filet of sole, shipped them through to Fort Worth, Texas, and landed them there without the least shrinkage and the temperature of the car was 17 degrees. The result is that now 50 cars are being rushed to completion to handle the shipment of fish alone.

"In Glasgow silica gel is being used to dehydrated the air in blast furnaces. On an ordinary humid day, some 40 tons of water are pumped over the coke in the manufacture of big iron, and all through the air. By the use of silica gel this is eliminated, the silica gel taking all this moisture out of the air.

"And now the time has come to harness this principle to refrigeration. Electric refrigeration has its field; silica gel has its field. Silica gel will take hold where electric refrigeration leaves off, and we are very glad to have Copeland take hold of this part. It will play a big part in the commercial refrigeration industry."

W. D. McElhinny, vice-president of the Copeland Products Co., promised the distributors that manufacture of the new silica gel units would commence within a very short time, and called on them to have men ready to send to the factory to get service instruction, so that there would be no delay.

QUESTIONS RIGHT OF CENTRAL STATION TO SHUT OFF CURRENT

Criticizes Collection Methods Described in News Article

Jan. 28, 1928.

ELECTRIC REFRIGERATION NEWS,
Detroit, Mich.

Dear Sirs:

The writer read with interest, the article in your last issue in regard to credit risks and methods of collection. I must take issue with the party quoted as to the method of collection for merchandise sold by a public service corporation, either gas or electricity. I cannot agree with Mr. E's legal right to shut off when the gas or electric bill is paid or tendered and nothing due the service company except what might be due on a merchandise account for reasons stated below.

The electric or gas companies are given the right to use the streets or roads without compensation to adjoining owners and owe a duty to the public. They are termed public service corporations and must give equal service to all who will pay for the service. This is compulsory on all public service corporations. If they attempt to intimidate a customer by threatening to cut off the service simply because a merchandise account is not paid, they are, in the writer's opinion, threatening something that they have no legal right to do and are liable for obtaining money under intimidation or, if service is shut off, for damages by reason thereof. To allow the service company any such right of shut off would give them a club which other companies selling the same line of goods do not have and would be class legislation and void as to public policy since the service is practically a necessity.

Even though the right of shut off was in the purchaser's contract for non-payment of merchandise the clause would still be void, since the company was intimidating the customer to sign something that they had no right to demand, same as railroad companies in stipulations against negligence, there being no consideration and void as to public policy.

When that certain public service corporation realizes their duty to the public, or any other public service company for that matter, do not believe that it will want to risk being hailed into court on a damage suit of obtaining money under intimidation, either before any state supreme court or the United States Supreme Court, for shutting off current or gas for the sole reason of a balance due on a merchandise account. Of course, if the bluff works as per the report of one credit manager it does not go any further, but if he or the others persist in it there will be a day of reckoning and the company or companies will undoubtedly be called into court for a test case.

Summing the whole matter up is as follows: Two different contracts exist in all cases of the kind, one for service and one for merchandise, and different methods apply for collection. The current or gas can be shut off for the non-payment of arrears on the service contract, but for the balance due for the merchandise the goods can be repossessed under the conditional sales contract or suit started for the amount due, giving the service company no advantage over any other person or company for the collection on merchandise accounts.

Yours very truly,
A. P. RICKMIRE.

KELVINATOR MAKES DUAL SAVING FOR PIGGLY WIGGLY

Mr. Banks, butcher in a Piggly Wiggly store at Louisville, Ky., says that the Kelvinator refrigerating system which he uses to keep his meat is the best thing he has ever installed. He has a box seven by five feet, with a capacity of 2,000 pounds, which costs him from $8 to $9 per month in summer, and $4 in winter, to operate, against $50 when he used ice.

He has been using this system for about two years with practically no need for service. He says the great advantage is the dry cold, which enables him to keep meat in perfect condition for three weeks, which in an ice cooled box would become spoiled and have to be thrown away.

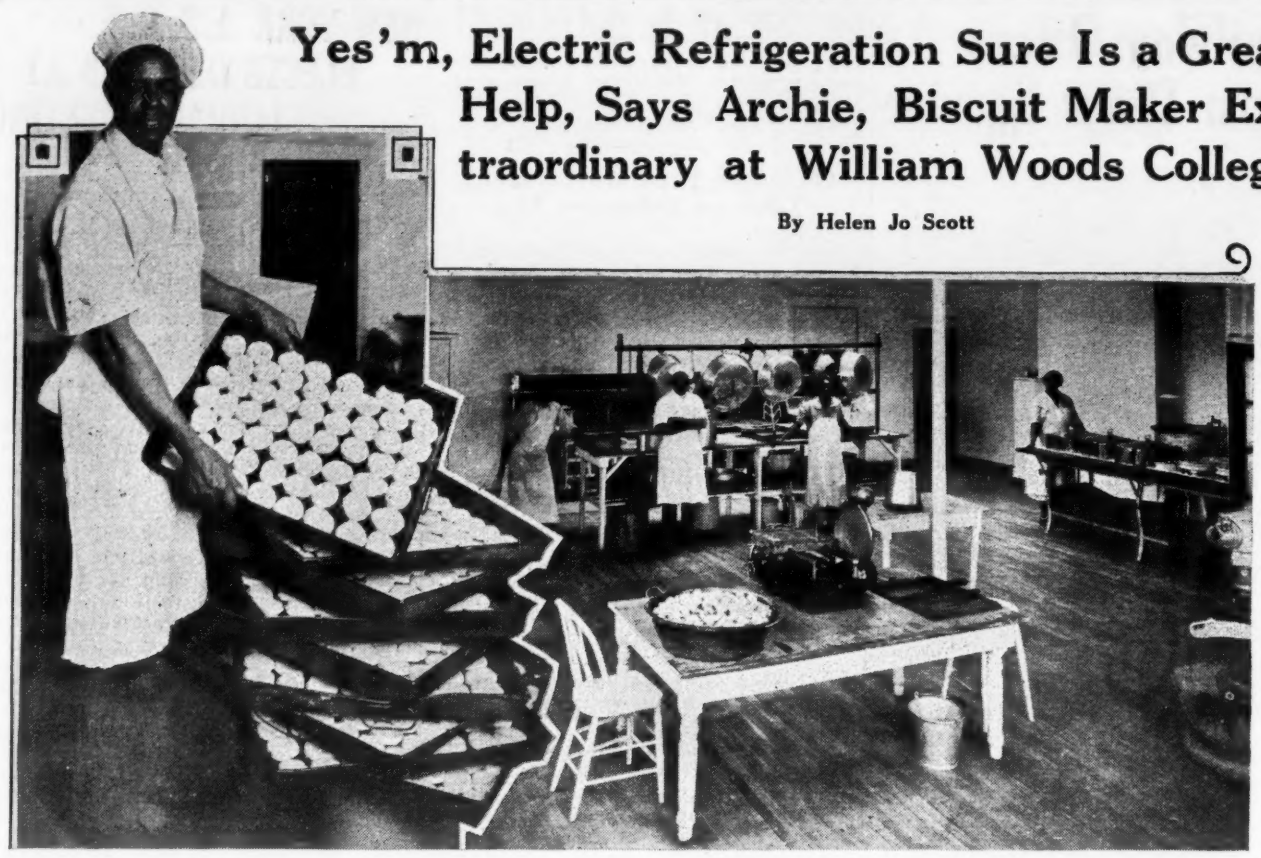
PLANT IN LOUISVILLE CAFE SUPPLIES 14 BOXES

The Mazzoni cafe and delicatessen, Louisville, Ky., has recently installed a Creamery Package electric refrigerating plant, put in by the Marx Manufacturing Co. of Louisville.

Mr. Mazzoni says this equipment is a real boon from the standpoint of cleanliness and convenience. He carries a line of bottled goods which was formerly kept in crushed ice, necessitating constant replenishing, and making a mess behind his counters. Mr. Mazzoni has fourteen boxes to meet his varied requirements, and is now able to keep each at the ideal temperature.

Yes'm, Electric Refrigeration Sure Is a Great Help, Says Archie, Biscuit Maker Extraordinary at William Woods College

By Helen Jo Scott



At William Woods College, Fulton, Missouri, the fortunate guest at a meal finds the most delectable hot biscuits—the kind for which the old South is noted. He finds, too, the crispest of salads, choice fruits, delicious meats, and excellently prepared vegetables. Food at this junior college for women, of which Dr. E. R. Cockrell is president, is of prime importance, and has been since the founding of the college some time back in the "eighties."

There is a tradition which says that the will of the man who made William Woods possible, had in it a clause stipulating hot bread twice a day. Perhaps not, but in one of the accompanying pictures the head cook is proudly displaying a few of the luncheon biscuits. Behind him in the corner is one of the reasons for the excellence of food at William Woods—electric refrigeration. Supplies for the kitchen are kept in the built-in refrigerator; it is cooled by the general refrigerating system.

This electric refrigerating system is an old one—and one of the hopes of the school is a new and modern one some time soon—but in the meantime, as it has for almost twenty years—a National Refrigerating Company plant will continue cooling to proper temperatures the three storage rooms.

Meats are kept in one of the rooms, vegetables in another, and in the third are milk, butter, and other dairy supplies. So when food for preparation comes upstairs into the spotless up-to-date new kitchen it is "just right."

The system is an old one, but it does the work—and work which it would be difficult for ice to do. Ice would demand additional space for one thing. It would require handling—probably the work of one additional employee to keep such huge cold rooms properly refrigerated—and a resultant messiness that is not found in the culinary department there.

"Yes'm it sure is a great help," Archie says, and Archie knows, for he has been keeping up the high standard of William Woods food for some time. And when one heads the preparations for meals for almost 300 persons, one knows if it is a great help.

ESTIMATE 31,000 ELECTRIC REFRIGERATORS IN USE IN NEW YORK CITY

There are approximately 31,000 household electric refrigeration units in metropolitan New York, according to a recent estimate, says Stephen Bennis, president of the New York Section, American Society of Refrigerating Engineers.

Estimates 4.3 Per Cent of Wired Homes Have Electric Refrigerators

Electric refrigerators are used in 4.3 per cent of the 17,596,390 wired homes in the United States, according to an estimate made by *Electrical Merchandising*. In the same estimate, electric ranges are said to be in only 3.35 per cent of wired homes. Electric irons are used in 87 per cent, vacuum cleaners in 38.8 per cent, washers in 28.4 per cent and heaters in 14.8 per cent. A marked gain in sales of electrical merchandise is reported for 1927.

FINAL FRIGIDAIRE REGIONAL MEETING AT BOSTON FEBRUARY 25

Five hundred Frigidaire salesmen, supervisors and dealers from Boston, Providence, Hartford, Albany, Worcester, Springfield, Toronto and Montreal will assemble at the Copley-Plaza Hotel, Boston, Saturday, February 25, for the first convention of the northeastern field organization. The meeting will be similar in program to other regional meetings which are being held in western and southern cities.

A special car will bring the Frigidaire party of twenty executives of the factory at Dayton, from New York, where a similar meeting is scheduled for February 23. The complete display of the entire line of Frigidaire products, including the new tu-tone porcelain household models, and the presentation of $100 in gold to each salesmen who achieved his quota in 1927, will be among the features of the Boston meeting.

"In past years Frigidaire Corp. has held its national convention in Dayton where its factories are located," said H. W. Newell, general manager of the New England distributing organization. "Picked salesmen only were selected to attend this meeting. This made it impossible for the entire field organization to be present and thousands of salesmen never came into contact with the heads of the organization.

"The convention party will carry with it a complete set of stage equipment, lighting devices and a large amount of other property which will be used in its official program. Frigidaire national conventions have always been considered unusual in the selling field on account of the special entertainment, playlets, charts and various stunts employed in depicting ideas to the organization. The Boston convention will be of the same general nature."

EARL LINES ELECTED HEAD OF FIFTH DISTRICT I. A. A.

At the conclusion of the convention of the Fifth District International Advertising Association, January 23-24, Earl Lines, director of advertising for the Leonard division of Kelvinator Corp., was named chairman of the district.

Included in the list of speakers were C. K. Woodbridge, president of Kelvinator Corp., and Gordon W. Kingsbury, former director of advertising of Kelvinator, Inc., and now general manager of the General Motors broadcasting department.

Servel Inc. Elects Directors

At an organization meeting of Servel, Inc., the reorganized Servel Corporation of Delaware, held February 1, 1928, the following directors were elected: Nicholas F. Brady, George W. Davison, William H. McCurdy, Ernest Aurell, Murray H. Coggeshall, C. A. Dana, Richard E. Forrest, W. S. Gray, Jr., Richard C. Hunt, John Higgins, George P. Smith, M. G. B. Whelpley, and Colonel Frank E. Smith.

Wayne Distributor Gives Four Principles of Electric Refrigeration Merchandising

(1) Deliver the Box Clean and Cold
(2) Call Every Day for an Entire Week
(3) Paint Box Any Color Desired
(4) Phone Customer Once a Month

PETLEY Carver, Inc., 461 Milwaukee St., Milwaukee, of which Robert B. Petley is president and R. T. Carver secretary, dealers in Wayne electric refrigeration, has a few business policies and principles which can very well be used by other dealers throughout the country, principles which have helped this firm build up a nice business in the Badger metropolis although they have only been in operation since August, 1927.

The **first** principle is: Deliver the box cold and in clean condition; *second,* have the service man call on the purchaser once a day for an entire week; third, paint the boxes any color that purchaser desires; and *fourth,* phone purchaser about once a month to find out if they are getting good service out of their refrigerator.

These principles are adhered to very rigidly by the Petley Carver Company, and as a result complaints are practically unknown. Such an ideal condition is desired by every electric refrigeration dealer.

It is very important to deliver a box cold to a purchaser, claims Mr. Petley, yet some firms deliver them right out of the shop, without having the refrigerator ready for operation.

"People certainly appreciate it when they receive the box cold and with ice cubes in it," said Mr. Petley. "It is just one little point of service that we insist on, and which brings many favorable comments from our customers."

Mr. Petley says that before a box goes out of the shop it is cleaned throughout, so that it is spick and span when delivered to the home. The place to clean a refrigerator is in the shop, and not in the home after it is set up, said Mr. Petley. Women are very particular about their homes, and all things they buy for it. If they see a refrigerator come into their home with grease and dust on it they will not get a very good impression of the firm."

Many purchasers of electric refrigerators have given them tips on other possible buyers, said Mr. Petley. They would not have volunteered this information if the sale and delivery had not been entirely satisfactory.

The second principle, the service man calling at the home once a day for the first week, is a very important factor in successful merchandising of electric refrigerators, Mr. Petley believes. New users of electric refrigerators always have one or two points to ask about it from time to time, and the service man can clear these up as well as servicing the refrigerator.

The Petley Carver Company sells both the Wayne and Seeger cabinets. One of their specialties is painting the boxes any color desired by the purchaser. This enables the housewife to harmonize the color of the kitchen and the electric refrigerator, a very important factor in selling to the better homes.

"We are planning to push the color idea more in the near future," said Mr. Petley. "The demand for colored cabinets has been very marked. We will shortly rent a display space on Wisconsin Avenue and show our full line there. Displays of colored models will attract atetntion in this location."

The fourth principle of electric refrigerator merchandising as employed by this firm is to phone each customer about once a month for the first three months to ascertain if they are satisfied with their purchase, and to see if there is any servicing necessary. Calls two months after a sale has been made have resulted in good tips on new prospects, Mr. Petley declares.

The firm sells refrigerators in Milwaukee, Waukesha, Washington and Dane counties. A branch will be opened in a good location in Madison within the next month, and active campaigns to secure rural business will be made. He believes that the rural business can be developed considerably.

There is a distinct advantage, Mr. Petley believes, in having a line of electric refrigerators to sell along with oil burners, water softeners and private water systems. People who buy this type of equipment are always in the market for additional equipment. When they have obtained satisfaction from equipment sold by a certain firm, they are always ready to place confidence in that firm's representatives.

COLOR

Today is the day of color and color-contrasts. The spectrum has come into its own! No longer are only pastels and conventional color combinations considered good form. The method of "sooth 'em and please 'em" is passe—one of "shake 'em and shock 'em" is the vogue. Brilliant contrasts that cause a surge of antagonistic feeling more often than not are the order of the day.

Automobiles to match milady's ensemble, furniture gone wild in an orgy of paints, futuristic fabrics, poignant perfumes that 'rouse color pictures of misty violet and sharp red, the not-so-humble kitchen utensils...all are expressing themselves in a perfect riot of color. We are emulating Mother Nature in her lavish use of color and sometimes, we think, going her one better.—Everyday.

WORKING ON CENTRAL REFRIGERATION PLAN FOR TROPICAL HOMES

Two French scientists, Georges Claude and Paul Boucherot, are said to be working on a plan to produce cold air in sufficient quantities in central refrigerating plants to cool private homes in tropical cities at a moderate cost. The cold air, it is planned, will be piped to the home and will be turned off or on as the temperature requires just as heat is regulated in the winter in modern homes and buildings of the temperate zones. The central refrigerating plant, it is planned, will use electricity for power.

AMERICAN EXPORTERS PROBLEM IS NOW ONE OF GETTING ORDERS

The export problems of American manufacturers are now largely sales problems, and those companies that realize this fact and conduct their export departments with this in in mind are in line for a profitable and increasing foreign trade, according to Oren C. Gallup, secretary of the Export Managers' Club of New York, Inc., in an interview which appeared recently in the *New York Times.* In explaining this statement, Mr. Gallup said that only a few years ago American manufacturers were devoting their attention along the lines of the mechanics of packing and handling export products. The American manufacturer was considered as knowing little of export methods and felt that he must pattern this end of his business after the methods of similar businesses in other countries.

The American manufacturer or exporter has now graduated from this elementary school, Mr. Gallup stated, and has become an experienced exporter to whom the detail of export shipment has become a familiar practice and the mystery largely eliminated. Today, exporters in Germany and England are watching their American competitors, realizing that they must change their policies to meet conditions created in recent years.

Now that we have learned the more mechanical details of this profitable phase of business, the problem now is to get the order. Mr. Gallup stated "the details for handling it are incidental and easily arranged. Making the sale and turning it into permanent and foreign trade are the existing problems facing the export manager. How is this condition being met? Some firms are not meeting it. In fact, many of them do not recognize that a new situation does exist and that they are still trying to conduct an overseas business on the same basis as they did twenty or more years ago.

"The other type of exporter has been able to visualize the actual situation and is making headway in markets abroad by the application of the same common-sense methods which have lent success to his efforts in the home trade."

Mr. Gallup concluded with the thought that the modern export manager is of an entirely different type than the old-time export manager. He must be awake and understand that different markets require in many cases an entirely different handling of the same situation and his value to his company will be measured by his ability to meet changing local conditions and bring in the sales.

SOLID CARBONIC COMPANY BUILDING PLANT TO MAKE CARBON DIOXIDE ICE

W. E. Ditmars, president of the Solid Carbonic Company, Ltd., 100 East 42nd street, New York, announces that the large new plant which is being built by the company near Wilmington, Delaware, for the purpose of large steel production of solidified carbon dioxide as a commercial refrigerant, will be ready for operation about April 1.

The Solid Carbonic Company, Ltd., has acquired the controlling interest in the Carbice Corporation of America and will continue the work which has been started by the Carbice Corporation. The raw material supply for the manufacture of the product is derived from the Eastern Alcohol Corporation, a jointly owned subsidiary of the E. I. du Pont de Nemours & Company and the National Distillers Products Corporation. The new plant is being built on property adjacent to the Eastern Alcohol plant and the du Pont Works.

FUTURE OPPORTUNITIES OF BUSINESS WILL TAX HUMAN INGENUITY

C. King Woodbridge, president of the Kelvinator Corporation and third term president International Advertising Association, says that, "next year, and in the future, America will offer greater business opportunities than human ingenuity and energy can cope with.

"Business will succeed because it will utilize the assured values of sound budgetary-controlled administration, use the facilities and machinery of mass production, and employ the great power of advertising with intelligent application to sales."

Simplified Practice Committee Reports on Ice Cans, Defers Action on Hanger Bolt and Sleeve Location

The Simplified Practice Committee of the Refrigeration Industries met at the office of George B. Bright, chairman, Detroit, Michigan, on January 31, 1928, to consider the surveys which have been made covering size of ice cans and ice cuts, and of location of hanger bolts and sleeves. After a careful study of the above subjects, the following action was taken:

Four sizes of ice cans were suggested to the National Association of Ice Industries, the Refrigerating Machinery Association, and the manufacturers of ice cans, with a request that they recommend these sizes as standard for the industry, and report their action to the Committee on or before April 15, 1928.

A further suggestion was made to the above that one of the four sizes be recommended as standard for future installations and renewals.

In view of the fact that the survey of hanger bolt and sleeve location is not yet in final form, this matter was referred back to C. C. Spreen with a request that the recommendation covering these features be submitted to the Committee on or before April 15, 1928.

When recommendations have been received from the above mentioned interests, the Committee will call a general conference of all refrigeration interests for the purpose of securing final adoption of the recommended standards.

The members of the Simplified Practice Committee are as follows: George B. Bright, chairman, 2615 12th St., Detroit, Mich.; C. C. Spreen, chief engineer, Electric Refrigeration Corporation. Detroit, Mich.; Charles J. Gibson, president, Gibson Refrigerator Co., Greenville, Mich.; Leslie C. Smith, secretary, National Association Ice Industries, Chicago, Ill.; J. Blair Easter, Keystone Refrigerating Co., Beaver Falls, Pa.; and ex-officio: LeRoy E. Kern, technical secretary, American Institute of Architects, 19 West 44th St., New York; and R. L. Lockwood, Division of Simplified Practice, Department of Commerce, Washington, D. C.

Constant Temperature Preserves Precious Blossoms

Fred Haupt, florist, Louisville, Ky., has recently built a $150,000 branch store in which he uses a Buchbinder refrigerator installed by F. A. Clegg Co., Louisville.

Mr. Haupt has an old fashioned ice cooled box in his other store and says that the cost of operating the electric refrigerator is just about half that of maintaining the other box. Besides it gives a more uniform cold. It keeps the flowers perfectly fresh at a saving, for differences in temperature cause most blossoms to wilt.

Wicander Opens Chicago Branch

Wicander & Co., Inc., 271 Madison Ave., New York City, manufacturers and importers of cork products, announce the opening of a new branch office in Chicago, at 180 North Michigan Avenue, under the direction of J. H. Bracken, refrigeration engineer, who has for a number of years been associated with the United Cork Co., of Chicago. A complete stock of cork board is being carried in that city.

Georgia Dealer Reveals Methods which Produced $170,000 Sales in 1927

Contractor-Dealer Says Most Serious Mistakes Are, Insufficient Down Payment and Selling Unit Too Small for the Job

If a dealer in electric refrigerators doing business in a small city sells twenty-five machines the first year, fifty the second, a hundred the third, and keeps on at that rate, doubling his sales each year, how many years will it take him to reach the "saturation point" of his territory?

Or will he find the "saturation point" as elusive as the end of the rainbow, as the market for his machines grows in proportion to his sales?

The man who has a satisfactory answer to these two questions will render a favor by sending it to John Brown, proprietor of the Brown Electric Company, Columbus, Georgia, whose sales have for the last four years been increasing in geometrical ratio and who is wondering just how long it is possible for them to continue at that rate.

It is not to be understood that Mr. Brown is worried over his problem in mathematics. He is too busy and his business is too good for that. There may be a "saturation point," he admits, just as there may be an end to the world, but both are too far in the future to cause him much immediate concern. And in the meantime, the desire to own his machines is spreading like the measles, and every machine he puts out makes a dozen more people want them.

Refrigeration is 90 Per Cent of Yearly Sales Total

Mr. Brown began the sale of farm lighting plants in 1919, and later branched out as an electrical contractor-dealer. Four years ago he began the sale of electric refrigerators, which has grown year by year until it now represents ninety per cent of the volume of his business.

Last year his refrigerator sales amounted to $126,000 list, or $170,000 installed, and he is counting on running his 1928 business well up toward twice these figures.

Mr. Brown is credited with leading the United States in individual sales on the refrigerator he handles, with approximately $150,000 to his credit, and has won almost every prize he has had a chance at; trips to the factory and elsewhere, a machine for his personal use, and the like.

There is no magic about selling refrigerators, as Mr. Brown sees the situation; it is just a matter of working from early morning until night, digging up prospects and presenting the merits of the machine in a business like way and then, after the sale, making certain that every buyer will get so much satisfaction out of his purchase that he will help sell his friends.

Maintains a $10,000 Stock

Next to his own energy and enthusiasm, Mr. Brown's best aid in selling is his display in his store, which represents about $10,000 stock and which includes every size and type a customer is likely to be interested in. His display is said to be the best in the state, and one of the best in the south.

"It is easier to sell from a complete line than from a sample," said Mr. Brown. "And the sale is made easier if, when the prospect asks you when you can make delivery on the machine selected, you can answer, 'Today, sir.'

"Few of the prospects who come in have definitely made up their minds as to just what they want. The chances are that their interest has been aroused by machines seen in the homes of friends and they have a vague idea that they want something of the same kind, but they want further information before they invest the price of a refrigerator; which is a lot of money for most of the people in these parts.

"But with a large display to select from, units from the largest to the smallest, the good points of each can be studied and compared, and when a selection is made the buyer is better satisfied that he has selected the machine best suited to his needs.

Display Indicates Permanence

"Seeing a large display convinces the prospect that the merchant is in the electric refrigerator business for keeps, that it is more than a side line with him, and that to keep on selling he must give his customers what they want and keep them satisfied." As Mr. Brown put it, "the people of Columbus know that I am a permanent resident and have my money invested here, and that I will be here and in business as long as the machines they buy from me need servicing.

"We have sold the people of our community on the fact that the electric refrigerator has passed the experimental stage and is now a standardized and dependable product, like the automobile. A few years ago we were handicapped by the more or less general belief that our machines were excessively high priced because of their newness, and perhaps not entirely perfected, and many would delay making purchases in the hope that the prices next year might be a great deal less and that a better machine might be placed on the market. Of course, our machine is being improved every year and reduced in price as far as conditions permit, we tell customers, and remind them that the same is true of automobiles and that no one goes without a car in the hope that next year's model will be better and lower priced than this year's car.

"We have in our territory an electric refrigerator of the make we sell that has been in continuous service for the last twelve years that requires almost no servicing. That is a big selling aid, for it is but logical to reason that if a machine built back before the war, when electric refrigeration was little more than an experiment, does this well, a new and modern machine will do equally as well. This old-timer makes a lot of our sales easier for us.

"A big aid in building a sales volume is ability to finance locally all sales the acceptance corporation will not handle. We have thus been able to get profitable business that we could not have obtained otherwise."

Mr. Brown was asked what he considered the most serious mistakes now being made by large numbers of merchants selling electric refrigerators, and mentioned the following:

1. Selling on too small cash payment.
2. Selling units too small to meet the requirements of the buyer.

$45 Minimum Down Payment on Household Units

In his own business, Mr. Brown requires a minimum first payment of $45 on domestic sales, and $100 on commercial installations.

With that much financial interest in the machine, it will stick, he has found. Rather than give it up, the purchaser finds a way to get the money with which to meet his payments if he is hard pressed, and there is little danger of its being turned back on the house. If, however, the payment were a very small one, and especially if the purchaser is permitted to fall behind on his payments, there is the temptation to tell the dealer to "come and get it" if he meets financial reverses, has unexpected expenses, or business requires him to move to another city.

The matter of the size and price of the unit the customer should buy is a matter over which Mr. Brown and his prospect often differ. The first cost looks high to the prospective customer who has been using an ice refrigerator, and his inclination is to buy the cheapest or one of the cheapest, reasoning that it will hold as much or more than the refrigerator he has been using.

Mr. Brown, however, tries to sell him on the idea that with the greater advantages of the electric unit he will find a great deal more use for his refrigerator than he did previously and will need a much larger capacity; that it will be found desirable to buy perishables in larger quantities and keep them, perhaps for weeks, in the more efficient refrigerator. It is pointed out that the cost of operating a larger unit will not be a great deal more than a small one, and that the advantages gained will be out of all proportion to the cost.

Salesmen on Commission and Drawing Account

Selling in Columbus and in several nearby towns—in one of which he has a branch store and display room—Mr. Brown employs four salesmen, whose sales for the year average about $20,000 each. They work on commission, with a drawing account to fall back on during the months when sales are hard to close and most of their time is taken up in hunting prospects to be sold with the coming of warm weather.

Four factory-trained service men are employed all the year and paid straight salary. When not engaged in work in connection with refrigerators, they are used on house wiring.

Mr. Brown's advertising bills—all on electrical refrigerators—run to $5,000 a year. Half of this goes for newspaper space and half for billboards. These two forms of advertising supplement each other, and the one would not be profitable without the other, in the opinion of Mr. Brown.

The business of selling electric refrigerators is an all-the-year proposition, Mr. Brown's four years' experience has shown him. He makes sales every month in the year.

It is, of course, influenced to considerable extent by the seasons, but so is every line of merchandisnig. It is not strictly a seasonal line that is sold, in the sense that radio, for instance, is seasonal, and a dealer who is prepared for occasional dull periods might give his full time to selling electric refrigerators without excessive overhead. Mr. Brown has almost come to this point, for the refrigerator end of his business has grown so much more rapidly than the electrical end that it now represents ninety per cent of his annual volume.

Salesmen Busy All Year

January and February are the poorest months of the year, so far as sales are concerned, as is the case in almost every business. But in the case of electric refrigerators, the time of the salesmen is well employed during these months for they are hunting up and interesting prospects and will receive their returns when they close sales with them a few months later.

Sales pick up in March and get a good start in April, and until September business is at its best. Here is better than six months of good selling in a single stretch.

October and November are slack months except for the sales on commercial units which have been neglected during the rush on domestic business during the previous six months.

December is a good month, and promises to be a better one each year, due to the growth in popularity of electric refrigerators as Christmas gifts.

"There is not a day in the year when a live refrigerator salesman can't profitably employ his time," said Mr. Brown. "He may not be able to make a sale at the time, but he will be able to cash in on his work later in the year.

"Even in the worst months there are a surprising number of sales made by the man who goes out for them. Our best salesmen make enough out of their commissions to keep them going all the year, and do not find it necessary to fall back on their drawing accounts."

Finance Company Advises on Policy for Sound Time-Payment Selling

Suggests 25 Per Cent Down and 12 Months to Pay for Household Customers, 15 or 20 Per Cent and 18 to 24 Months for Commercial Business

By Paul Fitzpatrick, Vice-President,
Credit Alliance Corporation, New York

NOTE: The following article was prepared in response to a request by ELECTRIC REFRIGERATION NEWS for suggestions which will assist distributors and dealers in adopting a sound policy for merchandising electric refrigerators on the time payment basis.—Editor.

We have pursued a very conservative course in respect of credits extended while a number of companies have gone very much further, both in allowing a small down payment and in length of time for installments therefore. The experience of this company would not be a criterion for the industry as a whole.

We furthermore discriminated carefully in respect of manufacturers whose product we would finance, as, of course, a weak manufacturer of a poor product creates doubtful paper.

For what it is worth my opinion is that sales of household electric refrigeration should be made on the basis of not less than 25 per cent paid down and not more than 12 months allowed for the balance. Manufacturers who are endeavoring to force their product into use on the basis of it costing the purchaser no more than the ice bill do not subscribe to this principle, and there is always a certain number of finance companies whose ignorance of sound business is as great as the manufacturer's.

On commercial refrigeration a down payment of perhaps 15 per cent or 20 per cent in the case of sound purchasers would be justified, providing the maximum of time allowed for the installments did not exceed 18 to 24 months. These terms should be confined to standardized products.

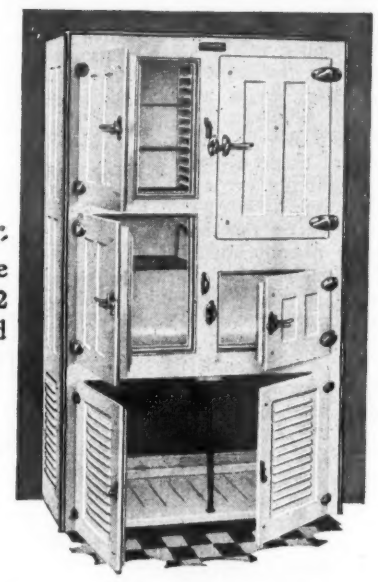
On built-to-order engineered installations a more substantial down payment should be required, and if the sums involved are large, perhaps a longer time than 24 months would be occasionally justified.

As to the future, it is perhaps dangerous to prophesy, but I believe there will be a steady tendency to concentrate production in the hands of fewer companies and these companies will have to merchandise their products through organizations which are adequately developed on the service side as well as on the sales. In most cases to date there has been a lamentable lack of understanding regarding the service required on the part of most of the dealers when they take on a line. Experience has shown that their profits are all absorbed in maintaining service for which there was no provision and the mortality and turnover has been extraordinarily high.

Electric refrigeration, however, is here to stay and when it recovers from the effects of its "jazz development" of the last two years and sound manufacturing, distribution, service and finance policies are adopted and lived up to, the industry should be a very attractive one with which to co-operate from a finance company standpoint.

It is my opinion that the article itself is one which will almost certainly be largely distributed on a finance basis.

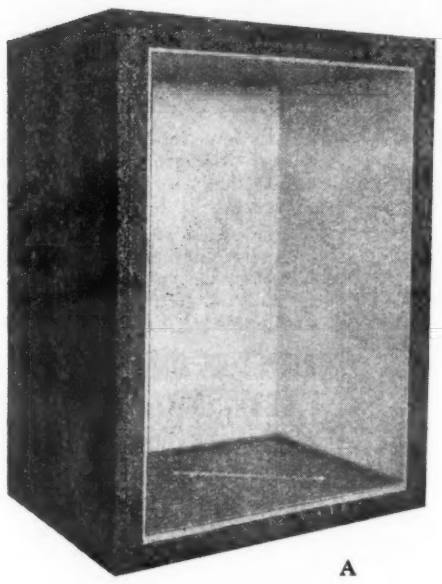
I have seen the ELECTRIC REFRIGERATION NEWS from time to time and wish to compliment you on the character of the paper you have built up in so short a time.



The Exorbitant Cost of Shipping Refrigerators Can Be Turned Into Profit

A REFRIGERATOR cabinet worth $75 at the factory costs from $83 to $85 at a point 500 miles away and from $88 to $103 when the point of sale is 2000 miles removed. Shipping costs place a tax on every such box varying from 11 1-4 to 37 1-2%. The industry cannot afford to permit such a handicap to exist.

The obvious solution of this problem is to ship cabinets in semi-fabricated form and assemble them locally. Instead of shipping 40 refrigerators in a car, 250 knock-down shells can be shipped. Instead of paying $28 for crating handling, damage and freight to a typical point the shell can be laid down for less than $2.00. This saving of anywhere from $6.00 to $26 on each refrigerator presents a wonderful profit opportunity both to the manufacturer of units and to the local assembly plant.



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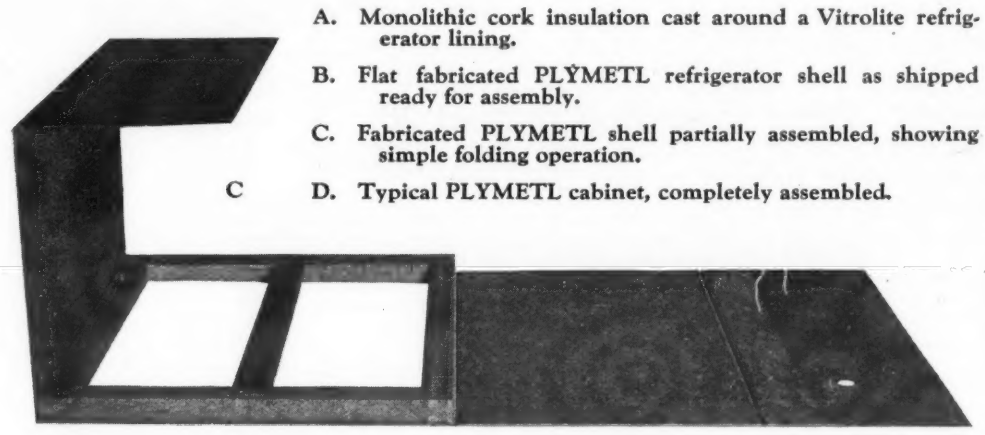

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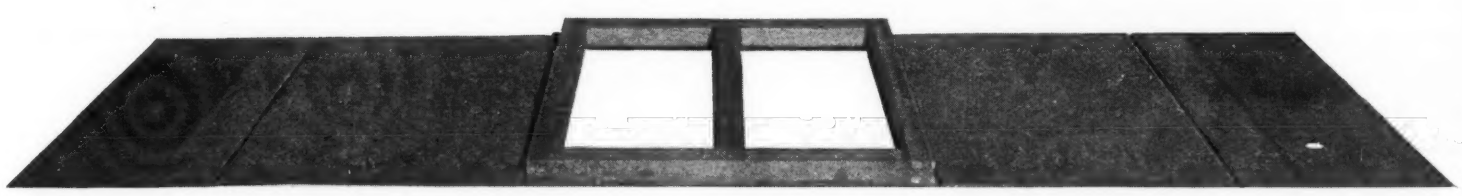


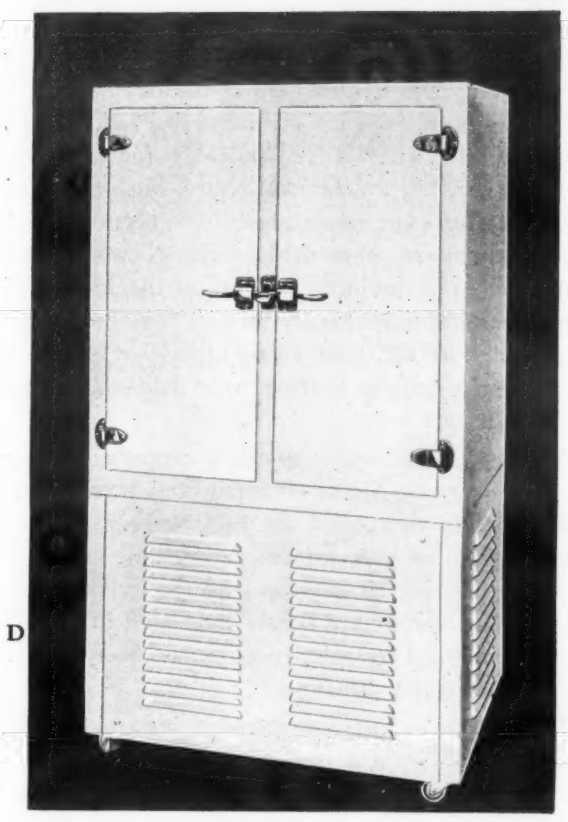
B

A. Monolithic cork insulation cast around a Vitrolite refrigerator lining.

B. Flat fabricated PLYMETL refrigerator shell as shipped ready for assembly.

C. Fabricated PLYMETL shell partially assembled, showing simple folding operation.

D. Typical PLYMETL cabinet, completely assembled.



D

How the PLYMETL Refrigerator Solves the Problem

THE PLYMETL cabinet is peculiarly adapted to knock-down shipment and local assembly. A fortune has been spent in the last five years in developing a type of construction that is simple, flexible, economical and which raises the standard of efficiency in refrigerator cabinets to the level which is necessary for the permanent success of mechanical refrigeration. This is the only refrigerator that is adaptable to the assembly plant idea. A nation-wide system of assembly plants is now being formed by means of which unit manufacturers and distributors can secure PLYMETL boxes from local plants for delivery by truck. A number of territories are now covered by such plants and the system is being extended as rapidly as capable men can be found.

Superior Features of the PLYMETL Cabinet

Aside from the saving in shipping costs effected by the PLYMETL refrigerator this design offers unparalleled advantages in construction. The use of PLYMETL—which is structural plywood faced with zinc coated steel sheets—makes it possible to eliminate the ordinary wooden framing and the leaky joints common in other designs. PLYMETL combines great strength and stiffness with light weight. A design has been worked out by which panels can be made up at the factory with grooves and notches so arranged that a simple folding operation produces the shell. The vertical joints have the exterior steel facing continuous around the 90 degree angle. The horizontal joints at top and bottom and the vertical joints in the middle of the back where the ends of the panel meet, are soldered firmly together, making a smooth, tight joint. No metal trim is needed on a PLYMETL refrigerator for there are no open joints to cover up.

The space ordinarily occupied by the wooden framing is filled with cork in the PLYMETL cabinet, thus greatly increasing its efficiency. Monolithic cork is used which covers the entire lining except the door opening. The tight shell covering this cork on the outside makes it impossible for moist air to enter and condense with the resulting decomposition of the insulating medium which so often happens with the ordinary type of box.

PLYMETL door panels are completely enclosed in steel, making them tight fitting throughout the life of the cabinet because they cannot warp or shrink.

PLYWOOD
HASKELITE
PLYMETL

Geo. R. Meyercord, *President*

There are other important advantages but these typical features indicate clearly that the problem has been solved correctly—starting with the ideal requirements of mechanical refrigeration and not from the standard construction followed for years in ice boxes.

Profit in PLYMETL Assembly Plants

The tremendous savings effected by the PLYMETL cabinet enable the assembly plants to show a profit on a selling price that is attractive to manufacturer, distributor and consumer. All the guess work has been taken out of this assembly plant. Three thousand cabinets were shipped and put in use last year without a claim for rebates or allowances. The panels, the cabinet—even the special fabricating machinery—are covered by patents.

No charge is made to the Assembly Company for the franchise or for the use of the Company's patents. A very small capital is required to operate a plant in a city of less than 250,000 population; an equipment costing $10,000 can produce upwards of $1,000,000 worth of cabinets yearly. A plant can pay expenses on a production of three or four cabinets a day.

National advertising and selling on a co-operative basis will be carried on by these assembly plants. Anyone interested in starting such a profitable business is invited to ask for further details of these plans, the franchise agreement, and the profit possibilities. Full information gladly furnished.

Haskelite Manufacturing Corporation

133 West Washington St. CHICAGO

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ELECTRIC REFRIGERATION NEWS

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F. M. COCKRELL, *Editor and Publisher* H. A. DELASHMUTT, *Advertising Manager*
HUGH J. MOORE, *Assistant Editor* BEULAH WERTZ, *Circulation Manager*

FEBRUARY 15, 1928

Publicity

In the adjoining columns will be found some interesting reactions to recent issues of ELECTRIC REFRIGERATION NEWS. Three subscribers, in widely separated localities, have written the editor protesting against an apparent attitude of unfairness toward the interests of the company whose products they sell. While an analysis of the editorial columns of past issues should be ample evidence of the unprejudiced policy of the NEWS toward all makes and types of equipment, we can readily appreciate the feelings of these readers and can understand their impression of the particular issues mentioned. Far from being annoyed by such criticism, the NEWS feels complimented that its readers should show this keen interest in the service of the paper and their sensitiveness to the slightest indication of a questionable editorial viewpoint.

We believe that we are justified in the claim that the columns of the NEWS have been kept as clean, as free from political or selfish influence, as any trade publication in successful operation. We do not hesitate to admit, however, that there is frequently a fine line between what is news or educational service and what is free publicity for the manufacturer. Furthermore, ELECTRIC REFRIGERATION NEWS cannot be guided entirely by the imperical rules of experience which have been set up by many of the high grade publications in other fields. The NEWS is highly specialized, being devoted to only one subject. Because of the fact that its field of service is thus definitely and intentionally limited, it is permitted to develop that subject more fully, by far, than would otherwise be possible. This generalization has a very definite bearing upon editorial attitude toward manufacturers' publicity.

There is no gainsaying the fact that the average manufacturer does like to see the name of his company and product in print. We have no quarrel with this viewpoint. In fact, we constantly encourage the manufacturers to keep us fully informed regarding any and all of their activities which might possibly be of interest to the industry generally. We are convinced that our readers are keenly interested in the affairs of the manufacturing companies. Our only difficulty has been in securing sufficient information to satisfy the demands.

There is, for example, a pressing demand for accurate figures regarding the past and present production of the different companies. Unfortunately, the manufacturers are almost as one in refusing to divulge this information. We believe that they will, in time, be willing to furnish accurate production statistics and that this will be beneficial to the industry. We believe also that the manufacturers will, in time, be quite willing to exchange the results of their experience more freely and that such action will materially accelerate the progress of the industry.

Manufacturers Invited to Tell of Achievements and Plans for Expansion

In the Catalogue and Directory number which was published on January 4 of this year, the NEWS openly invited the manufacturers to talk about themselves. In order to avoid aimless boasting, five specific requests were made, as follows:

(1) "Please tell us in approximately 300 words the outstanding achievements of your company during the year 1927, with specific reference to improvements in design, additions to, or changes in your line of products.

(2) "Please furnish an executive statement of approximately 100 words outlining your company plans for market development or expansion of operations during the coming year.

(3) "Please give your opinion of the need or opportunity for an industry organization.

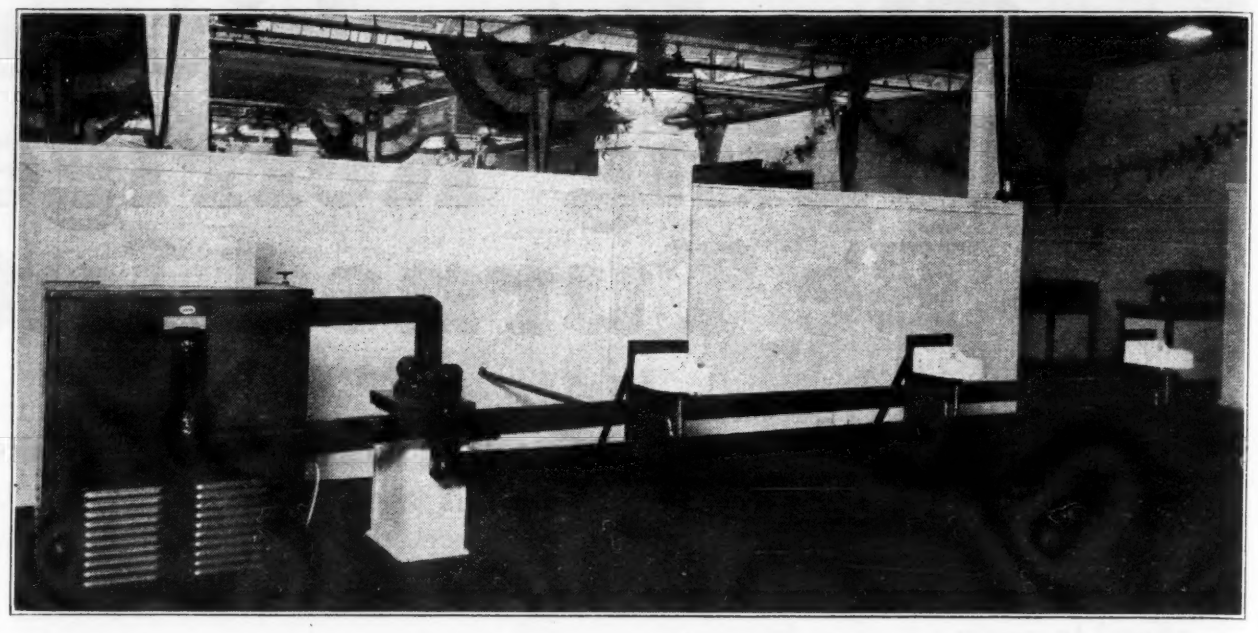
(4) "Please send detailed specifications covering each size and type of machine, cabinet, or other product you manufacture.

(5) "Please send a list of your company officers and departmental executives for the Personnel Directory. (Include branch office managers.)"

With the exception of minor changes, and the cutting of some replies which were far in excess of the designated limit, the material was published as received. Some important companies failed to respond, much to our regret, but the reasons in a number of cases were made known to us. Another similar opportunity will be given to manufacturers in the March 28 issue. It will be known as the "New Equipment Number" and a considerable number of pages will be devoted to this feature.

In brief, the manufacturers will be again invited to tell the story of their new products fully and without charge. The offer will be open to all regardless of advertising considerations. This should be fair enough to satisfy everybody and we believe it will result in a most interesting and valuable number of the NEWS. We suggest, therefore, to the good readers whose letters are published on this page, and to others, that they write their headquarters organizations urging immediate attention to this opportunity. The NEWS will guarantee to have on hand an ample stock of paper and ink to do the job.

Demonstration Exhibit of Ebinger Water Cooler Equipment Shows Operation of Circulating System



This exhibit of the D. A. Ebinger Sanitary Mfg. Co., Columbus, Ohio, shows the method of circulating the chilled water with a motor driven pump.

Kelvinator Dealers Protest Lack of Comment on Company Activities in Columns of the News

SAYS WE IGNORED THE DADDY OF THEM ALL IN DIRECTORY LISTINGS

"Just been reading your latest issue of ELECTRIC REFRIGERATION NEWS with a great deal of interest and wonder—read it very carefully, and from this fact have discovered something that is to me very surprising for my impression has been all along that your paper was being issued in the interest of electric refrigeration, no matter what name it might bear.

"Much to my surprise and sorrow as well, this particular issue does not bear out this fact. In scanning your directory list, you don't even mention the oldest and the largest manufacturer who specializes in refrigeration alone, in the world, that is, the Electrical Refrigeration Corp., and the reference you make of Kelvinator is not even given a capital letter heading, neither is Nizer and Leonard mentioned at all. Why this should be is more than the writer can understand.

"If you have any good reason why you should so ignore the daddy of them all, and you must have some good reason or you would not do this, well and good, but even at that, believe it's a mistake even if some competing company happens to own the paper it's not good business even then to do this.

"Don't want you to think that the writer wishes to tell you how to run your paper, far from it, it's yours and you can do as you like, print it or not print it, boost one manufacturer or none at all, but if you don't play fair, you defeat the very purpose of your splendid publication.

"The writer is not directly connected with the above named concerns, am selling their product for the Guyan Hardware Co., of this city, and the reason we do sell them is, that after almost seven years in the electric refrigeration game, we are more convinced each year that Kelvinator-Nizer-Leonard products are not only the oldest, largest, but the best in the world.

"Thanking you for giving enough of your valuable time to read these lines, and assure you the writer means no personal offense, am just still wondering why this should be."—Roy McElhaney, Manager Guyan Hardware Co., Huntington, W. Va.

Note—The Electric Refrigeration Corp. was by no means neglected in the "Catalogue and Directory" number—January 4. If you will refer to page 18, column 3, you will find the list:

"Electric Refrigeration Corp. (see Kelvinator, Inc.)."

On page 20, column 2, you will find 6½ column inches devoted to Kelvinator, Inc., including mention of Kelvinator, Nizer and Leonard equipment, a list of all executives and detailed specifications of all Kelvinator self-contained and remote units.

Also on page 20, column 3, you will find Leonard Refrigerator Co., listed with the names of officers. Nizer is not included because it is no longer a separate organization, their sales being handled by Kelvinator, Inc.

With reference to the bold face capitals which appear immediately above the names of certain companies, you will find this explained in the box on page 13, column 3, where it reads:

"Note—**Names marked in bold type thus** See advertisement in this issue of ELECTRIC REFRIGERATION NEWS. Index of advertisers on first page."

This explanation is also repeated under the directory headline on page 18.

The directory information regarding Electric Refrigeration Corp. was listed under Kelvinator, Inc., at the request of the company.—Editor.

BELIEVES NEWS BIASED IN FAVOR OF THREE OR FOUR OF THE OTHER MAKES

"The January 18th number has just been received and really, it is quite remarkable how you can display Kelvinator products and studiously eliminate any mention of whose product it is.

"For instance, on page 8, this Ruth Gordon is looking at a Kelvinator, but, of course, it would not do to let anybody know, and, on page 1, the Reolite Case is a Kelvinator equipped product and, of course, it is not mentioned.

"I have felt for some time that ELECTRIC REFRIGERATION NEWS is biased in favor of three or four of the other makes, and I have wondered whether it is a case of whether the other fellows come through with a good sum for mention, or is there some personal bias against giving Kelvinator equal publicity.

"Understand, this is just my personal feeling, and it might be that I am personally biased in favor of Kelvinator."—George C. Sheldon, The Sheldon Manufacturing Co., Nehawka, Nebr.

Note—Mr. Sheldon is quite right regarding the omission of Kelvinator credit in connection with the photograph of Miss Ruth Gordon which was reproduced on page 8 of the January 18 issue. Quite a long story was received with this picture, giving many details regarding Miss Gordon and the occasion, but in "making up" the paper it was necessary to cut the caption and in doing so mention of the Kelvinator name was inadvertently omitted.

With reference to the Reolite display case, at the Edgewater Beach Hotel, shown on page 1 of the January 18 issue, Mr. Sheldon is apparently in error in stating that it is Kelvinator equipped. Upon investigation it was found that the case is no longer in use in position shown at the Edgewater Beach Hotel. In fact, we find that it was cooled by ice instead of mechanical refrigeration, being a portable unit which is moved from place to place in the hotel. In publishing the picture, we were acting under the impression that the case was electrically refrigerated, although no statement was made as to the method of refrigeration in the heading or description lines under the cut. The picture was selected because it showed an interesting application and fitted in with the editorial program, hotels and restaurants as a market being featured in this issue.

Edgewater Beach Display Case Cooled with Ice

Commenting upon this, A. T. Golding, of Ottenheimer Brothers, Baltimore, Md., writes:

"We were rather anticipating your letter of February 6 regarding the Reolite display case in the Edgewater Beach Hotel, which you pictured in your issue of January 18.

"It was far from our intentions to slip anything over on you, because we must frankly state that this case is at the present time, and at the time the picture was taken, being operated with ice. We did not know, however, or rather did not remember, at the time the picture was sent.

"The size of ours was so small that we did not notice that ice was being used, but unfortunately it developed quite clearly in the size in which you ran the picture.

"We certainly regret this occurrence, and sincerely hope that the fact that the picture got by you also has not caused any ill will toward you in the electric refrigeration field. We have plenty of very fine installations with machine operation, and it is unfortunate that we just happened to select the one for you which was operated with ice. The picture itself, however, was so good that we felt it would add materially to the value of the reproduction."

We are glad of this opportunity to give our readers the correct information in this connection, but, as Mr. Golding says, "It was a good picture."—Editor.

CRITICIZES OMISSION OF KELVINATOR AND OTHERS FROM JANUARY 4 ISSUE

"Your recent issue, January 4, giving full directory of all the companies interested in electric refrigeration, proved a very interesting one.

"I have been one of your subscribers since the beginning and it seems to me, and it has also been expressed by many members of this organization, that this last edition seems to be printed for the sole purpose of advertising our friends, the Copeland. No article appears concerning other mutual friends, such as the Frigidaire, Servel and General Electric, or our own company—Kelvinator—but Copeland has at least six articles.

"This would indicate somewhat a bias attitude on your part, which will reflect back to you in the success of your paper, which up to this time it has richly deserved.

"We are very enthusiastic here over your publication, but we feel in this last issue that you have not been fair to the numerous other companies in this business.

"However, to show you that my heart is still in the right place, I am enclosing five subscriptions and attach my check for $5.00 to cover same."—H. R. Hendy, Sales Manager, Household Div., Collins Kelvinator Corp., Los Angeles, Calif.

Manufacturer Failed to Furnish Statement Requested

Note—We can readily understand the impression gained by the apparent inattention to a number of leading companies in the columns devoted to "Achievements of Manufacturers" and "Merchandising Plans for 1928," features of the "Catalogue and Directory Number," January 4.

The condition referred to, however, was not due to any biased attitude on our part. We endeavored to obtain statements from all manufacturers. In fact, a printed leaflet in which certain specific questions were asked was mailed early in December to all manufacturers of electric refrigeration equipment on our list.

Frigidaire, Servel, General Electric and Kelvinator failed to reply to this invitation, and in the absence of an authorized statement by an executive, it was necessary to omit comment regarding these companies.

In the case of Servel, a statement was received later, and this was published in the January 18 issue, appearing in the right hand column on the front page.—Editor.

THINKS THE NEWS SHOULD TAKE A STAND AGAINST UNETHICAL ADVERTISING

"We have been a subscriber to this paper for a long time and have seen it grow from a small paper to a very important publication. We feel, however, you should come out in a more decided stand against misleading and unethical advertising."—Donald S. Stophlet, Wisconsin Electric Refrigerator Company, Waukesha, Wis.

Electric Water-Cooling— A Big and Profitable Field for Development

Industrial Plants, Railroad Stations, Hotels, Restaurants, Theatres, Hospitals, Office Buildings and Department Stores Offer an Attractive Market

THE electric refrigeration industry is just beginning to realize the tremendous size of the market which lies before it, the large number of uses for electric refrigeration service and the great variety in types of equipment which will be required to meet the specialized needs of all kinds and classes of users.

During the past three years a large share of the industry's attention has been devoted to the household market. This field is truly one of great magnitude when we consider the fact that only about 4 percent of the homes now wired for electricity are equipped with this modern appliance. The household market has many attractions for the manufacturer because of the opportunity it offers for quantity production of a fairly limited line of standardized units.

The commercial and industrial fields, however, are proving equally attractive and offer a number of advantages to the dealer which are not found in handling domestic equipment. In fact, some electric refrigeration enthusiasts do not hesitate to voice their belief that the big field for immediate profits and substantial business for the future is to be found in the commercial market.

American Public Wants Cold Water

Consider water-coolers as an example. The American public wants cold water. An amazing number demand ice water in spite of much medical advice against it. While views and tastes may differ as to the exact temperature which is most desirable, the travelling public, the retail customer, the office and factory employee—all are unanimous in demanding cold water and plenty of it.

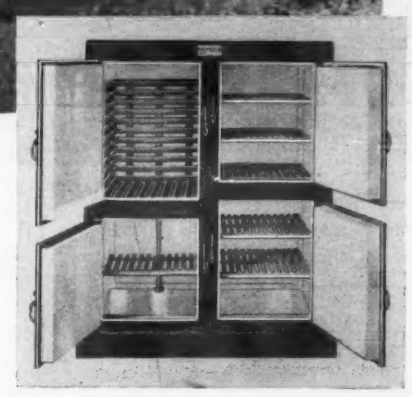
There was a time when the employer of labor gave little thought to the health or comfort of his employees. In recent years, students of industrial efficiency have impressed upon management the dollars and cents value of the utmost attention to the welfare of the worker. Today the industrial institution is backward, indeed, which does not attempt to provide an ample supply of cold water within convenient reach of every employee.

The presence of the snowy-white drinking fountain supplying water cooled with electric refrigeration equipment, is one of the outstanding marks of a progressive establishment. The executives of large industrial plants, railroads and restaurants, office buildings and theatres, department stores, hospitals and many other types of business and public service are showing a keen interest in electrically operated water-cooling equipment. A considerable number of large sales have been reported during the past year. A great many are trying out the equipment with sample installations in order to secure comparative data which will guide them in making future purchases.

From the viewpoint of the manufacturer the application of electric refrigeration to water-cooling has not been so simple a problem as it might appear to be. Refrigerating engineers say it is one of the most difficult to handle satisfactorily. Cooling a given quantity of water to the desired temperature is simply a matter of figuring the size of machine. In practice, however, the fluctuations in the demand for drinking water are so great in the average installation that it is quite difficult, indeed, to insure a constant temperature. A vast amount of study has been given to the problem in an effort to find a method which will provide ample quantities of water which is cold enough under a peak load without becoming too cold at other times.

In order to focus the attention of distributors, dealers and public utilities upon the sales possibilities for water-coolers during the coming season, ELECTRIC REFRIGERATION NEWS has requested the manufacturers to furnish detailed information regarding the type of equipment now available. While the following data is not complete, it is sufficient to show representative models and to present a broad picture of the present development in this field. A number of manufacturers have indicated that they have such equipment in process of development but that they are not yet ready to announce their line. Further attention will be devoted to this important application in later issues of the NEWS.

Mississippi Tow Boat Boasts Modern Refrigeration



This Diesel tow boat "North Star," operated by the Dillman Egg Case Co., Carruthersville, Mo., is proud of its Frigidaire equipped Herrick refrigerator. This equipment is standard on all Dillman boats.

Water Cooling Standards and General Information

From Data Book of Frantz Refrigeration Co.

1 cubic foot of water	1728	cubic inches
1 gallon of water	231	cubic inches
1 cubic foot of water weighs	62.4	lbs.
1 gallon of water weighs	8.35	lbs.
1 gallon of water cooled 1° F. gives up	8.35	B. T. U.
1 gallon of water cooled 10° F. gives up	83.5	B. T. U.
1 gallon of water cooled 20° F. gives up	167	B. T. U.
1 gallon of water cooled 30° F. gives up	250	B. T. U.

B. T. U.—British Thermal Unit—The amount of refrigeration required to lower the temperature of one pound of water 1° F.

The latent heat of ice is 142 B. T. U. That is to say, 1 lb. of ice at 32° F. will require 142 B. T. U. to melt it into water at 32° F., or 142 B. T. U. must be extracted from water at 32° F. to freeze it into ice at 32° F.

From this we can enumerate the following figures showing that a compressor with a rated capacity for cooling water is equivalent to an ice consumption as follows in B. T. U. extraction:

Compressor rated to cool the following water in ten hours.	Number of B.T.U. extracted in reducing water temperature 30° F.	Equivalent to lbs. of ice consumption.
25 gallons	6250	44 lbs.
50 gallons	12500	88 lbs.
75 gallons	18750	132 lbs.
100 gallons	25000	176 lbs.
200 gallons	50000	352 lbs.

It is therefore safe to assume that Frantz water coolers of sizes given below are ideally adaptable for use with electric refrigerating units with an approximate capacity as follows:

Model Water Cooler	Compressors rated to cool the following number of gals. 30° in 10 hrs.
Two and four cooling unit sizes	25- 50 gallons
Four, six, and eight cooling unit sizes	50-100 gallons
Eight to sixteen unit sizes	100-200 gallons
Sixteen unit models and larger	200 gals. and over

WATER COOLING DATA

From Commercial Frigidaire Reference Book

The following data has been collected upon the amount of drinking water required for different classes of installations:

Quantity of Water Used and Wasted

Restaurant Table Service—One gallon for each 10 persons served.
Office Building—One gallon per person per 8 hours a day.
Factory—Two gallons per person per 10-hour working day.
Hotel—One gallon per hour for five rooms.
Cafeteria—One gallon per each 16 persons served.

Water Cooling Capacities of Different Frigidaires

Twelve Hours

Single Cylinder, model S..... 75 gal. 30°
¼ h. p., models G, J, Q, R, U... 35 gal. 30°
⅓ h. p., models K and L.....110 gal. 30°
½ h. p., model N.....200 gal. 30°

Piping the water from a cooler to a series of fountains increases the amount of refrigeration required, even when the piping is well insulated. Pipe covered with Armstrong Cork Company's Brine Insulation (1⅞" thick) or Johns-Manville 2" Anti-Sweat Insulation will absorb the capacity of a ¼ h. p. unit running 12 hours in 200 feet of pipe. From this we can tabulate the amount of piping corresponding to the other Frigidaire units. The loss given in the table is for 30° difference in temperature between the water and the rooms, and this loss varies with the amount of difference. If the difference between the temperature of the water and the temperature of the room is only 15°, or half of that given in the table, aoy ¼ h.p. will take care of the loss in 400 feet of insulated pipe, instead of 200 feet as given in table.

Heat Loss in Insulated Pipe

With 2" Insulation

¼ h. p., models G, J, Q, R, U .....200 ft. of pipe 30°
⅓ h. p., models K and L..300 ft. of pipe 30°
½ h. p., model N.....500 ft. of pipe 30°

On circulating systems the entire length of piping, both the cold water line and the return must be insulated and also must be used for the calculation.

SAFETY MEASURES IMPORTANT IN WATER COOLING

Leakage and Electrolytic Action Must Be Avoided

By E. P. Mull, President
The Allen Filter Co.,
Toedo, Ohio

Electricity is such a powerful and efficient agent for so many applications that its utility is no longer questioned. Any offer of an apparatus operated by electricity is creditably considered, especially in the refrigerating line. Therefore when applied to water cooling any combined construction as offered seems to have been accepted during the last two years without enough thought and analysis being given to the protection necessary for the drinking water or to the detailed construction of the water cooler itself.

Where drinking water is concerned, both the life and health of the partaker is involved, and it can become a menace or an economical factor. That is why much stress has been laid by boards of health on the importance of a safe water supply. Millions are expended in large cities for filtration plants. Homes are protected frequently by individual water purifiers. Water is the largest element in the human body, and should be replenished daily by a safe and ample supply, properly cooled.

The source of water being accepted as safe, it should be cooled for drinking at a healthy, wholesome temperature of about 50 degrees in a container without any contact to absorb impurities from the air or otherwise.

Experience has determined that in the application of electric refrigeration, the drinking water should circulate through coils, or a special container, where the cooling element, under thermostatic control, will be close enough to absorb the heat units through an intermediary wall. Under no circumstances, for the purpose of safety, should the drinking water have direct contact with a container holding the cooling element where there is any possibility of the gas leakage. It is a well known fact that when sulphur dioxide enters water, sulphurous acid is the result, and this is unsafe to the extreme. For safety and best results, no drinking water in an electric cooler should be drawn by gravity from any open reservoir lined with metal.

The big problem is to supply a reliable combination of adequate cooling capacity at a price low enough to show an advantage over the use of ice. The above suggestions are offered to stimulate interest in electric refrigeration as applied to water coolers.

Construction and Installing of Drinking Fountains and Water Coolers Explained*

COMPARED to some other applications of electric refrigeration, that of cooling water by this means is relatively new. Although it has always been recognized that a sufficient quantity of pure and wholesome drinking water is necessary for health and comfort, it is only recently, except perhaps in connection with water for table usage, that much thought has been given to the proper cooling of this water.

Perhaps the first place in which the cooling of water came into general use was the office building. Here, ice tubs and water bottles were rented or bought, and the drinking water was kept cool by placing the ice directly in the water or by allowing the water to pass over the ice. In either case the temperature of the water was likely to vary considerably and in many cases the water was actually unhealthful as a result of the nature of the equipment and of the impurities in the ice.

Thus, the first type of cooler proved very unsatisfactory, both from the standpoint of producing and maintaining water at the proper temperature and from the sanitary standpoint. Coolers were later designed in which the drinking water was permitted to flow through a coil of tubing, around which cracked ice was packed. In flowing through this ice-surrounded coil, the temperature of the water was considerably lowered, and, as far as the small office was concerned, the problem was fairly well met. This type of cooler, however, although a considerable improvement over its predecessor, was totally inadequate when even moderately large quantities of water were desired, and by reason of the fact that it required attention daily, or oftener, was troublesome, messy and expensive.

As a result largely of the increase in the application of electric refrigeration in some other directions, and also because of the general raising of the standard of living, public demand became very strong for a water cooler which would economically produce an ample supply of pure water at the proper drinking temperature. In fact, the matter of serving good drinking water has recently become so important that guests in hotels, tenants of office buildings and apartments, visitors to public buildings, students in schools, workers in shops, stores, mills and factories, demand and are actually being supplied with refrigerated drinking water. And this water is being supplied not only because of the demand for it, but also because the employer realizes that the general health and efficiency of his employees depends, to a large extent upon the water which they must drink. In order to furnish large quantities of properly cooled and sanitary drinking water, the former inadequate methods have been largely replaced by the present electrically refrigerated drinking fountains and water coolers.

General Cooler Construction

The majority of electrically refrigerated water coolers consist of an insulated tank or bath of sweet water, in which is immersed an evaporator or expansion coil. The evaporation of the refrigerant within the evaporator results in the cooling of the water in this bath. The drinking water, which is to be cooled, is caused to circulate through a coil of tubing which is immersed in the sweet water bath, and its temperature is therefore reduced almost to that of the temperature of the water in the bath. Under ordinary conditions, the evaporator is usually allowed to operate at such temperatures as to cause a few inches of ice to form on its sides. The water flowing through the cooling coil can thus be reduced to a very low temperature without danger of its freezing. By regulating the operation of the compressor so as to control the thickness of the ice formation on the sides of the evaporator, it is possible to exercise control over the temperature of the drinking water. The cut below illustrates such a water cooler as has just been described.

The General Type Cooler

*Lesson No. 22 from the Correspondence Training Course, which is offered by the Nizer division of the Electric Refrigeration Corporation for the training of sales and service men. Lesson No. 21 was published in the December 7 issue.

The Direct Cooler

If the student will carefully study the path which the heat must take in going from the water to the refrigerant in the above described system, he will find that it must first pass through the walls of the water coil, then through the water of the water bath, next through the ice surrounding the evaporator and finally through the evaporator wall itself, before reaching the refrigerant. In an effort to reduce the losses which take place as a result of the passing of the heat through so many mediums, a new type of cooler has been designed in which the water bath is eliminated and the heat transfer is direct. In this type of cooler the water cooling coil is immersed in the liquid refrigerant of the evaporator. Thus, in order that the heat may get from the water to the refrigerant, it must pass through only the metal of the cooling coil and the efficiency of this cooler is, therefore, considerably higher than that of the other type. It possesses the additional advantage of very close control over the exit temperature of the water, for by controlling the temperature or pressure of the refrigerant within the evaporator, it is possible to maintain the exit water temperature at an almost constant degree, regardless of the changes in the amount which is used. The accompanying illustration further illustrates the manner in which this type of cooler is constructed.

The Direct Cooler

The installation of water cooling equipment may be made in several different ways. Following is a brief description of four standard methods.

The Complete Individual Cooling Unit

This type of installation is complete in itself, in that each cooler is supplied with its own compressor and evaporator. The compressor may be installed either self-contained or remote, depending upon the style and location of the cooler. By using an individual unit for each cooler, line losses are eliminated and refrigeration is produced and applied at the place where the water is to be used. This type of cooler is used when only one cooler is desired and also when several coolers are used, but where the distance between them is great enough to cause excessive line losses.

The Multiple Installation

In the multiple installation two or more coolers, each with its own evaporator and cooling coil, are connected to one compressor, in the same manner as are the evaporators in a multiple apartment house refrigerator system. The compressor is usually located in the basement or other convenient place. In this type of installation, the various connecting lines are thus used for the circulation of the refrigerant, the water being cooled directly at the fountain or bubbler.

The Non-circulating System

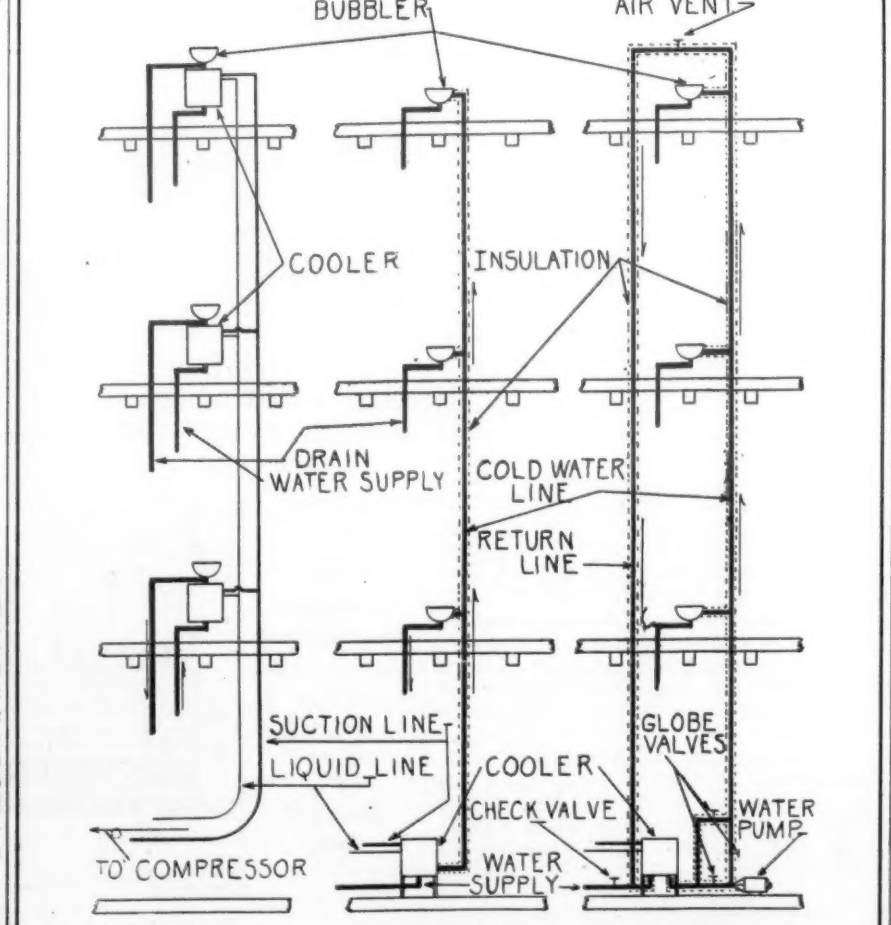
In the non-circulating system, instead of piping the refrigerant from one compressor to a number of coolers, one large cooler is employed and the water cooled at this cooler is piped to the individual bubblers or fountains, which are located throughout the building. It is called the non-circulating system in contrast to the system which will next be described, because the bubblers are not provided with return lines and the water can, therefore, flow from the cooler to the bubbler only when the latter is being used. In this type of system, it is advisable to limit the distance from cooler to bubbler to thirty feet, in order that line losses may not be too great, and also in order to insure cold water at the bubbler, almost as quickly as water is drawn from it.

The Circulating System

This type of system differs from the non-circulating system, in that each bubbler or fountain is provided with both a supply and a return water line and that a circulating pump is used to keep the cold water moving through the line at all times. Cold water is thus available at each bubbler the instant it is opened, regardless of how infrequently it may be used. When the distance between the bubbler and the cooler is greater than thirty feet, the circulating system should be used in preference to the non-circulating system. In both the circulating and non-circulating systems the water lines should be covered with a suitable thickness of good insulating material in order to prevent the loss of refrigeration and the sweating of the lines. The thickness of insulation over ½" to 1" pipe should not be less than 1½" to 2". The following sketches illustrate the manner in which the last three systems operate.

Installation

As far as the installation and connection of the refrigerating equipment for the water cooler is concerned, the work is practically the same as for any other type of application, and the directions which have already been given in the course should be followed. The location of the cooler and the running of the water lines present the only new problem. In all cases where groups of coolers are operated from the same compressor, the water outlets should be located as near together as possible in order that a minimum of connecting lines need be used. In the non-circulating system in which one cooler is used to chill the water for a group of outlets, if the amount of water used at the various bubblers is about the same, the cooler should be located as near as possible to the center of the system, so that the length of the various cold water lines between the cooler and the outlets will be somewhat balanced. If, however, the usage on the located that the least used bubblers come between it and the most used. In the circulating type system the water lines should never be less than one-half inch standard pipe, and where large amounts of water must be circulated, should be even larger. The same size of pipe should be used throughout the entire system. Since most manufacturers of water cooling equipment give full information as to the amount of water which must be circulated per hour in their circulating systems, and also regarding the manner in which the lines should be run, this information will not be included here.



Multiple System **Non-circulating System** **Circulating System**

Determining the Requirements

In specifying water cooling equipment for any type of service, it is first necessary to determine the amount of water which will be required per day. The amount of water required is dependent upon the number of people who will use the water in the course of the day and upon the nature of their occupation. The following table shows the amount of water which is required under average conditions for various classes of service and should be used as a guide.

Water Used and Wasted

Working conditions:	
Office building	1.0 gal. per person per 8-hour day
Factory (light work)	1.5 gals. per person per 10-hour day
Factory (heavy work)	2.0 gals. per person per 10-hour day
Steel mills & foundries	3.0 gals. per person per 10-hour day
Restaurant service	1.0 gal. per 12 persons served
Hotel service	1.0 gal. per room per day
Cafeteria service	1.0 gal. per 15 persons served
Theatre service	1.0 gal. per 35 persons

Knowing the amount of water which is to be cooled, it is next necessary to determine the number of degrees through which it must be cooled, that is, it is necessary to determine the inlet and the outlet water temperatures. Contrary to popular belief, the best drinking water is not ice cold water, but is water which as been cooled to only between 40° and 50°. Water of a lower temperature than this is actually injurious and should not be provided. In steel mills or in factories in which workers must engage in heavy manual labor, a higher temperature than this may even be desirable.

Line Losses

In all water cooling systems in which the water must be circulated from the point at which it is cooled to the point at which it is to be used, there are losses of refrigeration in the connecting line. Instead of expressing these losses in B. T. U.'s, it is more convenient to express them in terms of gallons of water cooled through a certain number of degrees. In this manner the line losses may be added directly to the amount of water required at the cooler in order to determine the required capacity of the cooler. For example: If the amount of water required at the bubbler or fountain is six gallons per hour cooled through 30°, and the heat leakage in the water line is equivalent to two gallons per hour, cooled through 30°, then the capacity of the cooler must be eight gallons per hour cooled through 30°, in order to satisfactorily meet the conditions. The table below shows the reduction of condensing unit capacity in gallons of water per running hour for different line lengths and room temperatures. Delivered water temperatures at 50° F. In figuring circulating water systems, both the feed line and return line piping should be considered.

Length of Pipe	Room Temp. 70° Temp. Diff. 20°	Room Temp. 80° Temp. Diff. 30°	Room Temp. 90° Temp. Diff. 40°
100'	1.1	1.6	2.1
200	2.2	3.2	4.2
300	3.3	4.7	6.3
500	5.5	8.0	10.5

Selecting the Equipment

Knowing the amount of water which must be supplied per twenty-four hours and the number of degrees through which it is to be cooled, reference to the Manufacturer's Catalogue will show the size and type of cooler which is required. In some catalogues the size of compressor required by each cooler is also specified. If this is not the case, the B. T. U. load may easily be calculated by multiplying the number of pounds of water cooled per twenty-four hours by the number of degrees through which it is cooled. A compressor should then be chosen which is capable of handling this load under the conditions of head pressure and back pressure which apply. The compressor capacity should be such that it is capable of handling this load without operating more than a total of sixteen hours per day.

Commercial Applications

The cooling of liquids by electric refrigeration is by no means restricted to water or to water which is to be used for drinking purposes. In addition to the cooling of the wide variety of beverages which are now being offered to the public, there are many commercial processes in which water or brine at a constant low temperature is necessary and the electric cooler finds wide application in connection with these. The specification of equipment for the commercial applications is usually easy, for all that need be determined is the amount of water which is required, and the number of degrees which its temperature must be reduced. Knowing these factors, the coolers and compressors should be chosen as outlined above.

Mr. Riley Rises to Remark on the Subject of Cooling Drinking Water by Electric Refrigeration

Comments on the Problems Involved in the Three Main Classes of Equipment

By F. B. Riley,
Member A. S. R. E.

THIS topic, like all Gaul, is divided into three parts. All three divisions are important and present problems peculiar to themselves in the matter of handling the mechanical parts of the system. Briefly the first division consists of the small portable, or individual unit with a removable bottle or container for the drinking water. In point of numbers of possible units this division is by far the greatest of the main divisions, as it embraces the office water cooler and the isolated unit where water under pressure and with sewer connections, is not available.

The engineering problems seem extremely simple in this type of cooling system, but in reality we usually find a thorn somewhere on the stem of the rose, and the thorn in this case is the maintenance of the water at the correct temperature for drinking purposes. The obviously easy way is to place a coil in the water receptacle or crock and by expanding the refrigerant through this coil, build up a small ice barrier which serves as a hold over maintaining temperatures while several glasses of water are being drawn in rapid succession.

Engineers Differ As to Correct Methods

This would be a wonderful world if everybody agreed with everybody else on all topics, but we find many engineers who disagree absolutely with the above suggestion, saying that the water is maintained at too low a temperature for drinking purposes, and that the water must not be kept below 44 to 46 degrees and under 55 degrees F. It is quite generally agreed that these temperatures may be ideal, but how are we to maintain these temperatures if there is no hold over other than the refrigerating coils? The machine seldom, if ever, has capacity for direct cooling, that is to say, to cool the water as fast as it may be withdrawn from the faucet. While one, or perhaps several, glasses of water at the right temperature may be drawn quickly, the last person in line will surely get a warm drink, and a warm drink on a hot day is not inspiring, to say the least. The mere problem of chilling the water is simple and economical, as the mechanical unit may be operated at relatively high suction pressures and thus take advantage of the greatly increased capacity of the compressor due to these high suction pressures. If we were asked which is the preferred method, we would shy our hat into the ring and say the ice barrier method has its advantages, then call the fire department to quell the riot.

Some of the concerns which cater to the tastes of the public in their milder drinks, such as distilled water, spring water, or bottled water of any kind, prefer a crock for the liquid to be cooled in, as the crock is easily cleaned, does not corrode or form oxides, or scale, and after it has been in use presents a more eye-appealing sight than a metal tank which has been discolored by the mineral elements in the water. This is another point of dispute among engineers, and it's every man to his own taste, as the old lady said wehn she kissed the cow.

The second division consists of the pressure fountains, where the water is drawn from the cooler at city water pressures. It may be an individual cooler in the office, but more frequently this type of cooler is found in the restaurant, soda fountain, theatre lobby, or other place where the demand is more or less constant for drinking water at a temperature suitable to the average taste.

Problem of Maintaining Constant Temperature

The problem here is either to maintain a sufficiently large volume of water, cooled to the proper temperature, so that a fairly constant demand will not raise the temperature more than three or four degrees, or to again build up a barrier of ice so that by using a long block tin pressure coil the water may be cooled to approximately the temperature of the surrounding sweet water which is in contact with the ice barrier.

This system is most frequently used in soda fountains, restaurant coolers, etc., although refrigerating coils are sometimes placed in pressure tight tanks, or drums, and the drinking water circulated around the coils in the container. The disadvantage of this system is that if for any reason the machine unit keeps operating and water is not withdrawn in sufficient quantities, the drum may freeze up and burst. This same argument might well be used in the first described system, where the drinking water is circulated through coils in a sweet water bath, but the comforting thought is that these things seldom, or never happen, so why worry about the things that might happen but never do. The accepted plan in the ice barrier method is to keep the drinking water coils at the farthest possible point away from the refrigerating coils, so that the ice barrier never quite touches the former.

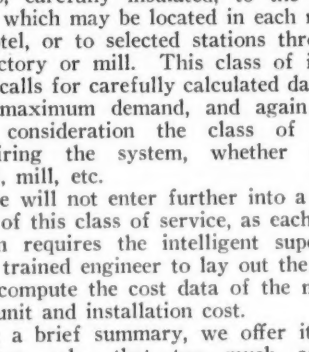
It is only when we take into consideration the consumption of large quantities of water by the individual that we must be particular about its coldness. Men who work under extreme temperatures, as in steel mills, etc., or operators in laundries, firemen, or men and women in other industries who are subject to hard physical strains under difficult temperature conditions, find that the temperature of the drinking water has a very great deal to do with their physical well-being. Cold drinking water, under these conditions, may have a very marked effect, biologically speaking. This brings us to the third great division of the drinking water problem, and one in which the small machine industry is only indirectly affected. We refer to the multiple systems, where the chilled water is circulated constantly through pressure pipes, carefully insulated, to the various taps which may be located in each room of a hotel, or to selected stations throughout a factory or mill. This class of installation calls for carefully calculated data as to the maximum demand, and again taking into consideration the class of service requiring the system, whether theatre, hotel, mill, etc.

We will not enter further into a discussion of this class of service, as each installation requires the intelligent supervision of a trained engineer to lay out the system and compute the cost data of the mechanical unit and installation cost.

As a brief summary, we offer it as an opinion only, that too much attention devoted to theoretical temperatures necessary to promote the greatest good to the greatest number will be wasted when it comes to actualities. The simplest and cheapest system which will approximate the requirements of this particular division of refrigeration will result in the greatest number of sales and bring the greatest amount of warm weather happiness to the greatest number of people.

FRANTZ SYSTEM OF UNITS IS FLEXIBLE

Frantz Refrigeration Co., 404-16 North Front St., Reading, Pa., offers a flexible system of water-cooling units in which the agitation principle is used during the cooling process. The cooling units used in Frantz water-coolers are made out of gray iron, then porcelain-lined inside and outside to make them sanitary and rust proof.



Frantz Self Contained Cafeteria Model 6-KK

Each unit holds approximately two quarts of water and is made with an agitating pipe, through which the water enters the unit and is carried to its base, at which point the incoming warm water is broken up and cooled by contact with the cold units and the cold water in them.

The units are made in two parts, joined together at the center, which facilitates taking them apart should it become necessary at any time. Coolers are built to contain from two to twenty or more cooling units, depending upon the amount of cold water needed and also on the capacity of the compressor used.

Cabinets are constructed of 20 and 22-gauge galvanized sheet iron with two inches of solid corkboard insulation. Standard finish is in French Gray or White Duco over a heavy rust proof undercoating. Cabinets are also finished in mahogany and blue porcelain at extra cost.

Frantz Model 4-EP With Angle Jet Stream Bubbler

LARGE CAPACITIES IN FILTRINE UNITS

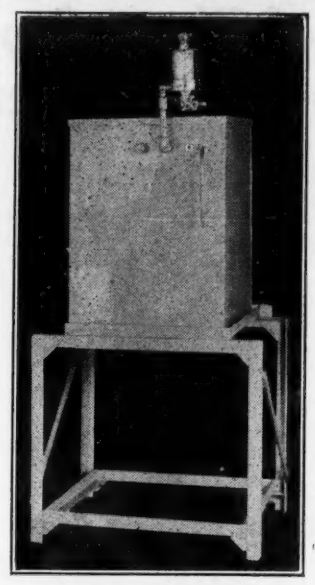
The accompanying cut illustrates models of typical Filtrine coolers manufactured by the Filtrine Mfg. Co., 51-53 Lexington Ave., Brooklyn, N. Y. These particular models are of the type used by Servel, Inc. The company manufactures coolers of a similar type for the Lamson Co., Kelvinator Corp. and the Welsbach Co. With a 22-A type Servel machine (225 lbs. ice-melting capacity) any of the Filtrine coolers will render 77 gallons per 8-hour day chilled to 30° with a peak 2-hour capacity of 30 gallons also chilled to 30°.

Filtrine Model 1-A with Automatic Side Stream Bubbler

With the Kelvinator 12800 compressor these coolers have an 8-hour capacity of 55 gallons with a peak 2-hour capacity of 30 gallons, also chilled to 30°. Larger capacities are, of course, obtained when used with larger machines.

All Filtrine coolers employ the direct contact method of cooling. The pressure cooling tank contains the low side expansion coil suitable for each type machine. The city water enters the pressure tank where it comes in direct contact with the expansion coil. This contact forms a block of ice over which all of the incoming water has to pass before escaping. This explains the high capacity of Filtrine coolers.

The remote type Filtrine cooler shown here consists of the pressure tank and low side expansion coil enclosed in an insulated steel box 18" x 18" x 25". This unit is designed for installation where it is desired to have only the water outlet or bubbler rather than the complete cooling apparatus in a particular location.



Filtrine Model 2 for Remote Installations

The Filtrine Company also manufactures specially designed filters for use with direct connection coolers. These are said to be small and highly efficient as well as easy to install. Both filters and coolers are in production and available for immediate delivery.

Direct method coolers are available for small circulating systems, complete with angle iron frame, booster centrifugal pump and filter requiring only the refrigerating machine to be complete. This equipment is available for use with machines up to 1,000 lbs. ice melting capacity.

OPALITE OFFERS RESTAURANT COOLERS

Included in the equipment for restaurants, lunchrooms, cafeterias, and soda fountains, manufactured by the Opalite Metal Specialties Co., Inc., 1052 West Monroe St., Chicago, Ill., are the two coolers shown here.

The automatic cooler, the smallest one manufactured by this company for electric refrigeration, is 45" long and 22" wide. It is designed for cooling milk cream and water. The cooling coil for the water is large enough to take care of 25 glasses at one draw. The milk pump is fitted into a 5-gallon container. The fact that pumps are used means a saving of current, since it is not necessary to remove covers each time milk or cream is desired.

The cooler is insulated with 2" sheet cork cemented, and a layer of ⅛" rubberized matting. The wood work is cypress painted with asphaltum paint and the cooler is lined throughout with

(*Continued on Page 12, Column 1*)

Electrically Refrigerated Water Coolers Designed to Meet Wide Variety of Commercial Needs

(Continued from Page 11)

re-tinned copper. The top and trim are of nickel silver or Monel metal.

The construction of the cooler with the display stand is the same as that of the automatic cooler described above. At the extreme left of the cooler is a 5-gallon compartment for ice cream. Following this a compartment for bottle milk which can be changed to bulk milk

Opalite restaurant cooler for milk, cream and water

with a pump, if desired. To the right of this is a T-shaped water faucet for double service on two sides, and following this, a butter tub for butter chips. On the extreme right is a compartment

Opalite restaurant cooler with pastry display stand

for bulk cream, in which a pump can also be used. The overhead shelving is used for pastry display and also for water tumblers.

This company claims to be the first manufacturer to make combination floor coolers for either direct icing or mechanical refrigeration and also claims to have manufactured more of this style of coolers than any other company. They are sold only through jobbers and dealers.

CENTURY TO OFFER FIVE MODELS FOR ELECTRIC OPERATION

The Century No. 400 water cooler for mechanical refrigeration units, made by the Century Brass Works, Inc., Belleville, Ill., consists of a cast iron top and bottom, and the inside and outside drums are made of heavy Armco ingot iron with 2 inches of Armstrong cork insulation between the outside and inside shells and also between the top and bottom. The lid is so constructed that there is no metal to metal contact, between the inside and outside shells, thereby eliminating the danger of sweat-

Century model 400 for city water connection

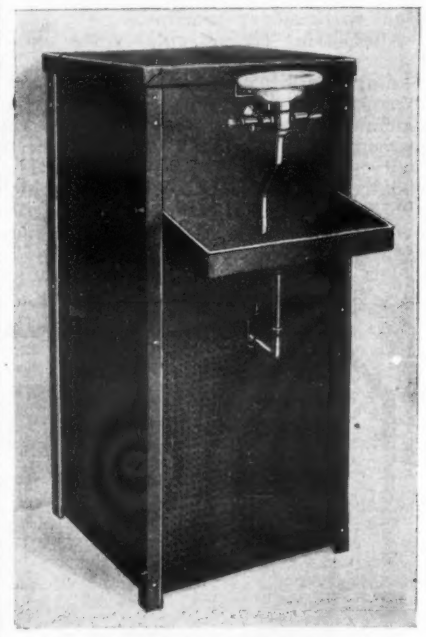
ing. The cooling coils, which the drinking water circulates through on the inside of the tank, are 20 gauge copper tinned inside and out and tested to 1,000 pounds pressure.

A sweet water bath is placed on the inside compartment and after the expansion coils of the mechanical unit have cooled, this water it will keep the drinking water supply cool for hours. This cooler is for direct connection to city water pressure, and may be used with any of the general types of refrigerating units now on the market, i. e., Kelvinator, Lamson, Norge, Universal, etc.

On March 1, the Century Brass Works, Inc., will have five different models of water coolers which can be used in connection with electric refrigeration units.

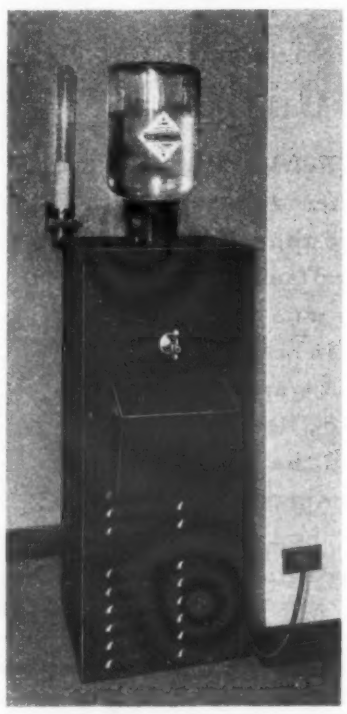
ALLEN FILTER CO. DESIGNS BASED ON LONG EXPERIENCE

The Allen Filter Company, Toledo, Ohio, have been manufacturers of water coolers and purifiers for over 35 years. This has necessitated a careful technical study of the art, in all its scientific features. They disclaim any knowledge of electric refrigeration, but they do claim a thorough and scientific knowledge of how a water cooler, or a water purifier, should be constructed to possess all of the essentials of sanitation, safety, economy and practicability.



Allen Model A connects direct to water supply

Two different types of coolers manufactured by the Allen Filter Co. are shown here. The Model A is connected direct to the city water supply and the Model B is designed for bottled water.



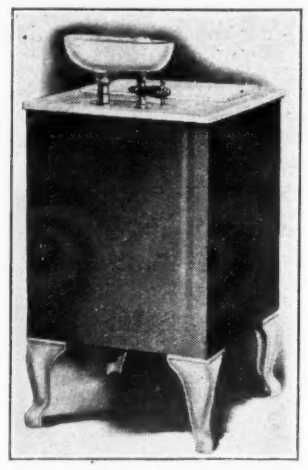
Allen Model B for glass bottle

PURO FILTER CORP. RENTS ELECTRIC UNITS

The Puro Filter Corp., 1217 Market St., Philadelphia, rents both ice and electrically cooled water coolers through its offices in Cleveland, Detroit, Los Angeles, Miami, New York and Pittsburgh. The Puro Filter Cabinet, electrically refrigerated, uses a Kelvinator model 12800 compressor. The drinking water is circulated in pure tin coils and is cooled indirectly by means of an ice water bath. The thermostatic control may be adjusted to any desired temperature of drinking water. The Type A Puro cabinet is 22" wide, 17" deep and 54" high. The Puro filter, as well as all plumbing, is concealed in the base of the cabinet.

EBCO COOLER LINE UNUSUALLY COMPLETE

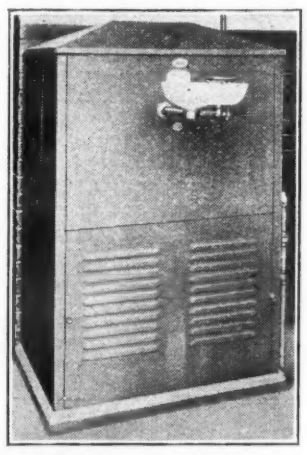
The D. A. Ebinger Sanitary Mfg. Co., 180 Lucas St., Columbus, Ohio, offers an unusually complete line of water coolers and drinking fountains, two models of which are shown here. Model C-301 "Ebco" Frigidaire cooler fountain, is



Ebco Frigidaire Cooler-Fountain Model C-301

designed for use in connection with a multiple hook up or as an individual unit with a remote installation. This unit has 2" corkboard insulation throughout applied with hydrolene. The tank is of 20 gauge copper bearing galvanized iron. The coil is of seamless copper tubing, tinned inside and out. The bubbler is of the improved angle stream type. It is designed to take a Frigidaire 20-X cooling coil. Its dimensions are, length 19½", with 19½" overall height 39½". There are several variations in finish and equipment of this model. When used with a Model S ¼ H. P. Frigidaire air cooled compressor, it will deliver 35 gallons of water in 12 hours reduced to 30 degrees.

The larger cooler shown here is a self-



Ebco self-contained unit for industrial plants.

contained model designed for industrial use. Variations of this unit for use in remote installations for cooling water for a number of outlets and in a number of different capacities determined by the use of the compressor used, are available. It may be had in white duco or sage green finish and with one or two bubblers located on the top.

The "Ebco" water cooler unit for circulating water designed to supply a number of drinking water units remotely located from the cooling source has a 3" corkboard insulation at the sides and bottom with 2" insulation at the top. Five parallel water coils of seamless copper tubing tinned inside and out insure a low internal resistance. This unit requires four Frigidaire type 22-X cooling coils. It also requires four Frigidaire Model N ½ H.P. compressors that may be placed in the lower compartment of the cooler. With this equipment, this cooler will deliver 800 gallons of water in twelve hours cooled to 30 degrees Fahrenheit.

For use in connection with water coolers of the type just described, the Ebinger Company manufactures a variety of drinking fountains and bubblers.

Water Cooler Data Continued on Page 13, Column 1

ELECTRICITY USE SHOWS PROSPERITY

An all-time record in Detroit Edison history was established January 24 when 8,014,000 units of electricity were used by Detroit factories and homes. A new peak load of 479,000 kilowatts used was established the same day between 4 and 4:30 p. m. This indicates an increase in Detroit's industry and prosperity, officials pointed out Saturday.—*Detroit Times.*

SELL TO MEET NEEDS OF INDUSTRY, NOT TO MEET COMPETITION

Some salesmen persist in selling against a competitor rather than in selling their product to meet the needs of the particular industry being served. This inevitably leads to price cutting, and manufacture degenerates into a feat as to who can hold out longest on the thinning bar of profits. This condition is partly aided by some company executives who stoutly proclaim one policy and just as quickly weaken under slight pressure and accept price-cutting business. The resort of the salesman to certain tactics of unfavorable comparisons with competitive equipment frequently becomes odious and some salesmen go as far as even to write such evidence of unfair selling, which more than once finally reaches the hands of the very competitor in question. While this condition exists it is difficult to bring the manufacturers together and elevate the selling plane. It must first be rooted out if we are to progress. This elevation of selling principles is of importance to the buyer, who not only is seeking the lowest price commensurate with quality, but is looking farther toward the development of the products which he must constantly buy.

Another method sometimes pursued by salesmen after the order is lost is to discredit the financial condition of the company receiving the order, especially where that company is small, and to try to plant in the buyer's mind the germ of suspicion that before the apparatus is delivered the seller may reach a financial condition that would delay delivery. This is not a relic of the past, as only within the last month a salesman, hearing that a small company had received an order which he was also trying to obtain, went to the buyer and began to cast reflection on the financial condition of the manufacturer receiving the order. Fortunately in this case the buyer was particularly well informed as to the financial condition of the electrical manufacturer in question and knowing him to be perfectly sound, he was in nowise adversely affected by the attitude of the salesman but rather in his mind there was set up a distinct barrier to this salesman and his product. However, experience has shown that only in too many cases has a salesman been able to set up a doubt in the buyer's mind which required considerable work to remove. These methods seldom get the salesman or his company anything but a negative reaction, and far better results would be obtained if the product were sold on its merits rather than against the competitor. Less business will be taken at low prices when this becomes the rule rather than what might almost be called the exception under present conditions.—*Electrical World.*

Appointed Merchandising Manager of Central Station

Carroll A. Dean has been appointed merchandising manager of the Lawrence, (Mass.), Gas & Electric Co. Mr. Dean was formerly in charge of electric appliance sales for the Lowell Electric Light Corp., Connecticut Light & Power Co., and Cambridge Electric Light Co.

WATER COOLERS

(*Continued from Page 12*)

COMPACT ABSOPURE UNITS IN FOUR STYLES

The Absopure Cooler & Water Co., division of General Necessities Corp., offers four different types of electrically refrigerated water coolers. The two models shown here are the smaller sizes designed for use in offices and stores where an average quantity of cold water will be required. Model A is finished in white lacquer and is equipped with a faucet and Monel metal drip basin. Pure block tin coils are used. Its dimensions are, height (including bottle), 60½", width 16", depth 16".

Model B is designed for use with a city water system. It is finished in white lacquer, is equipped with faucet, and has a Monel metal drip basin, as does the Model A. It is equipped with an Absopure filter. Its dimensions are height 51", width 16", depth 16".

In addition to these models, two units in larger sizes are available. These are designed primarily for installation where a considerable quantity of chilled water is necessary. Model C, designed for attachment to a city water system, is equipped with an Absopure filter. It is finished in white lacquer, has either a faucet or bubbler and a Monel metal drip basin. Its dimensions are height 51¾", width 19" depth at base 25½".

Absopure Coolers—Model A for bottled water, Model B for city water.

Model D is designed for the same uses as Model C but is fitted for use with bottled water rather than with city water. Coils used in this model are of pure block tin. It is finished in Absopure white lacquer, equipped with a faucet and has a Monel metal drip base. The dimensions are height (including bottle) 60½", width 19", depth at base 25½".

The same principle of refrigeration is used in these water coolers as is used in all Absopure refrigerating systems. Their operation is said to be almost noiseless and a continuous flow of cold water is assured.

COPELAND MODELS HEAVILY INSULATED

The accompanying photographs show the Copeland automatic water coolers. One of these has the sanitary bubbler for city water supply, and the other is for bottled water. Model K has a single cylinder compressor, 1/6 H. P. motor and 6 gallons per hour cooling capacity. Model L has also single cylinder compressor ¼ H. P. motor and a capacity of 14 gallons per hour. The lower frame is of steel and the upper part of wood. The finish is of pyroxylin lacquer. The insulation is 3-inch cork. One bowl assembly with attachments for spout or bubbler is standard on all models.

Copeland Self-Contained Models for Bottled and City Water

American Soda Fountain Co. Representatives Meet at Boston

The photograph above was taken at the close of the four-day convention of the American Soda Fountain Co., Watertown, Boston, Mass. This, the first sales convention to be held in the new factory of the company on Walnut St., was opened on Wednesday, January 11, and lasted through Saturday, January 14.

The feature of the convention was the unveiling of the latest improvement announced by the company—a new one-piece corrugated metal drainer for glasses. The meeting was taken up largely with questions of sales policies, distribution and advertising, with dinners and a theatre party adding the social touch to the gathering.

Officials of the company and sales representatives in attendance were as follows: I. F. North, president; T. Jenney, general manager; B. M. Chittick, assitsant treasurer; John Taeffner, general sales manager; F. H. Suarez, advertising and export manager; H. B. Cutting, purchasing agent; M. C. Johnson, superintendent; Roy Stacy, designing engineer; John Harper, designing engineer; R. S. Austin, Auburn, N. Y.; A. E. Balfour, N. E. sales manager, Watertown, Mass.; W. B. Berry, Gardiner, Me.; W. V. Dennis, Pac. Coast sales mgr., San Francisco Calif.; J. V. Dignowity, New York City; J. W. Flukes, Watertown, Mass.; Wm. Fox, New York City; R. M. Garrett, Jr., Pres. Roanoke Drug Co., Roanoke, Va.; W. J. Gulesian, Watertown, Mass.; J. C. Haker, Hartford, Conn.; W. N. Hutt, Pinehurst Warehouses, Inc., Pinehurst, N. C.; J. B. Landis, Philadelphia, Pa.; A. C. Long, Watertown, Mass.; J. M. McCackill, Pinehurst Warehouses, Pinehurst, N. C.; J. F. Pickett, Washington, D. C.; R. W. Powell, Watertown, Mass.; M. H. Reed, New York City; C. F. Rouse, Southwestern sales manager, Dallas, Tex.; J. B. Rushin, New York City; G. O. Smith, New York sales manager, New York City; W. L. Spear, Pittsburgh, Pa.; Tom Stovall, Southern sales manager, Atlanta, Ga.; P. B. Traylor, sales manager, Roanoke Drug Co., Roanoke, Va.; H. E. Van Daell, Philadelphia, Pa.; W. N. Wendell, Watertown, Mass.; J. J. White, Watertown, Mass.

FRIGIDAIRE GOAL $40,000,000 SALES IN THREE MONTHS

(*Continued from Page 1, Column 3*)

ucts shown at the convention were the new perfected water-coolers designed to chill bottled water, a new 1½ H. P. compressor of the air-cooled type, and a two-hole ice cream cabinet.

The work of the inspection department was told by J. E. Houser, chief inspector, and assurance of a large and able service department was given the salesmen by R. E. Smithson, service manager. Led by a band, the salesmen marched to Memorial Hall for lunch, afterward returning to the Victory Theatre for the afternoon session, during which talks on various phases of the business for the coming year were given by members of the Frigidaire executive staff.

Dinner Served in Japanese Setting

In the evening, dinner was served at Memorial Hall in an elaborate and colorful setting, representing a Japanese fete. "All set to go" was the slogan of the dinner meeting which appeared on banners and streamers throughout the hall. Mr. Biechler opened the evening's program with an account of his European trip from which he has returned recently. Mr. Biechler touched on business conditions in the countries he visited, his talk indicating good prospects for Frigidaire interests in foreign countries.

B. B. Geyer, president of the Geyer Advertising Co., complimented the gathering on the speed with which Frigidaire has advanced and paid tribute to Mr. Biechler for his nerve displayed in spending $10,000,000 in the past three years to build up the business. Talks were also made by Dwight Young, managing editor of the Dayton *Herald* and Dayton *Journal*, and Thurman (Dusty) Miller of Wilmington. The talks of the evening were interspersed with a variety of light entertainment.

Other Meetings

The second of these regional meetings was held at the Sherman Hotel, Chicago, on February 4, and duplicated, as far as the business program is concerned, the Dayton meeting. The third regional meeting was held at the Strand Theatre, Omaha, February 6, following which the list of speakers in their special car will go to San Francisco where they will appear on February 11 at the Scottish Rights Hall. The balance of the schedule of regional meetings is as follows: Atlanta—Biltmore Hotel, February 20; Hotel Astor, February 23; Copley-Plaza Hotel, Boston, February 25. As was mentioned in the preceding issue of ELECTRIC REFRIGERATION NEWS, approximately 8,000 miles will be covered during the month's trip and practically every Frigidaire salesman in the country will have attended one of these regional meetings.

FRIGIDAIRE HEADQUARTERS OPENED AT SEATTLE, WASH.

North Pacific zone headquarters of the Frigidaire Corp. have been established in the Securities Building, Seattle, Wash., serving not only the states of Washington, Oregon, Idaho and Montana, but Alaska as well.

J. K. Knighton has been sent from the headquarters of the Frigidaire Corp. at Dayton, Ohio, to have charge of the northwest interests of the company. In addition to Mr. Knighton, H. G. Stern, commercial engineer, has also recently been assigned as the factory's representative on commercial work requiring a technical knowledge. W. G. Coombs, another factory representative, will have supervision of service.

KNOX PROCESS SEALS CABINET INSULATORS AGAINST MOISTURE

The increasing attention which is being given to the subject of the insulation of refrigerator cabinets since the introduction of electric refrigeration, is evidenced in a description of the Knox process of insulation, as used by the Erie Art Metal Company, Erie, Pa., manufacturers of refrigerator cabinets. Following the practice of the majority of cabinet manufacturers, this company uses pure corkboard insulation. One-eighth inch space is allowed between the cork and the lining and also between the cork and the outer sheets of steel on all sides, top and bottom. Hot asphalt is forced into this space, driving all air out ahead of it. In this manner, the cork is hermetically sealed so that there is little possibility of moisture getting to the cork regardless of the length of time that the cabinet may be in service.

The elimination of this possibility of the cork becoming saturated insures the insulating value of this material remaining constant and makes it impossible for odors due to moisture to get to the food chamber.

An added advantage of this process, it is claimed, is the increasing of the rigidity of the cabinet; there being less danger of the outside of the cabinet becoming dented in transpotration or during installation. The cabinet is constructed in such a manner that any of the sheets may be removed for replacement, if necessary, and the doors are all interchangeable so that in the event of a damaged door, it is not necessary to return the cabinet for repairs.

The Monel metal trimming is so constructed that the edges will not cut into the lacquer. The hinges and latches are non-corrosive and the best grade of gasket is used.

BARTH REFRIGERATORS AND MONEL METAL IN PRIZE BUILDING

The Hotel Savoy-Plaza at Fifth Avenue and 59th Street, New York City, has been selected by *Building Investments* as the outstanding construction achievement of the year in metropolitan New York building operations.

The award was given to this particular structure because of its meeting four cardinal tests of structural excellence: first, the adaptability of site for type of structure erected; second, economy of plan; third, quality of material and workmanship; fourth, standard of architecture and design.

The new hotel is under the management of the Plaza Operating Co., which also owns and operates the Plaza Hotel. Refrigerators were supplied by L. Barth & Co., Inc. Close to 100,000 pounds of Monel metal was used in the manufacture of kitchen equipment, which was also supplied by the Barth Co.

A Study of Refrigerator Shipping Costs to the Export Market

By Geo. R. Meyercord, President,
Haskelite Mfg. Corp., Chicago

THE prophets, sons of prophets, and endless amateur advisers whose vocation is the diagnosis of American economic conditions, are all fairly well agreed on one point. The thing to do with our surplus production, it has been repeatedly stated, is to sell it to foreign markets. Unquestionably there is under way a distinct trend in this direction and there is perhaps no other outlet which offers so promising a market for electrical refrigeration. While exporting up to the present time has for the most part been undertaken only by a few of the larger manufacturers, they by no means have a monopoly on export possibilities for there are ample opportunities for the smaller operator if he will only go to the trouble of studying them out.

This article, the second one on the subject of shipping costs, by Mr. Meyercord, contains data which will be of especial interest to manufacturing executives.

In making a study of the market possibilities for the products of his company, Mr. Meyercord has collected a volume of statistics on production and distribution costs. He was invited by Electric Refrigeration News to contribute this information to the industry, which he kindly consented to do.

Quite naturally, this discussion brings out the advantages of the system for local assembly of cabinets which as been developed by the Haskelite Corp., but this detracts nothing whatever from the value of the facts and figures presented. This study is but an example of the tremendous amount of preliminary research work which has been carried on by manufacturers as a part of the development of the electric refrigeration industry. Many other manufacturers have, in their files, extremely valuable information on many phases of electric refrigeration. The publication of this data would in many cases be mutually beneficial to the manufacturer and the industry.

In spite of the obvious benefits to be derived from a free interchange of information within an industry, and with a volume of evidence testifying to such benefits to the most progressive and profitable of American industries, there are still some executives who view the practice as a divulging of business secrets and as an unnecessary aid and comfort to competition.

When we consider that the collective knowledge of all competitors may be reasonably expected to surpass that of any individual organization, it is quite obvious that a particular company has far more to gain than it has to lose by offering its own findings in exchange for those of other companies.

Shipping and the establishment of satisfactory foreign selling contacts and organization are the two important points. And of these two problems shipping is naturally the one which must be attacked first.

Unfortunately at the present writing there are no figures available covering total exports for last year. Segregation of figures on electrical refrigeration as such were not attempted by the Department of Commerce previous to February, 1927, but the figures for the months of February to October, inclusive, during last year show that of sets up to one-ton capacity better than 17,000 units were exported having a total value of more than $2,800,000.00, the average being close to 2,000 units per month.

A cursory examination of these figures shows Australia and South Africa well out in front, having absorbed over half of the exports for the month of October. But the forty countries listed as having received shipment include all the major nations and a good share of the smaller ones.

It might be mentioned in passing that the quality of the ice-box intended for export, especially for warm and tropical countries, should be of a good grade. Attempts to fit household refrigerator units to boxes which were notable chiefly for their poor insulating qualities have met with complete failure, as might be expected. The field for domestic refrigeration in warm and tropical countries is unquestionably a fertile one, but quality of the box as well as of the unit is of paramount importance. Generally considered the foreign market is for larger and higher grade units than the average household installation in the domestic field. This is principally because it is the homes of well-to-do people in these foreign countries that offer the first and easiest market.

So much for the general considerations of the export market. The problem of shipping to export is one which is often regarded by American manufacturers as a business full of mystery and strange practices and unknown terms such C. I. F., ship's option, conference rates, and complicated tariff schedules. As a matter of fact it is comparatively simple for there are many capable forwarding agents and custom house brokers who are not only able to handle shipments through from start to finish but to arrange the details even of handling remittances. Moreover, most of them are not only willing but anxious to co-operate with a manufacturer in determining whether or not there is an available market, and in many instances they can assist materially in the establishment of sales and marketing contact abroad.

There are many diverse items which enter into the cost of laying down an electric refrigerator in a foreign market. Many of them, such as consular fees, marine insurance and the like are of relatively minor importance and represent only a small part of the cost. The major items consist of packing, transportation to seaboard and ocean freight with foreign import tariffs and foreign rail transportation added on in some cases.

The cost of packing is, as with most products, an important item in the case of electric refrigerators.

If we may assume that it costs $4.00 to pack and crate a refrigerator for domestic shipment, it will be found that it will cost from 3 to 4 times this amount to properly pack the same box so that it is safe for the long sea haul. Not only must a box be used instead of a crate, but it must have considerably more strength and, more important still, must provide against damage by salt air and moisture through the liberal use of waterproof linings for the case.

Packing requirements for export are very well covered in the excellent publications of the Department of Commerce on this subject, and the requirements indicated should be followed closely. Good packing is an absolute requirement in export shipping and cutting down on packing costs is likely to lead to difficulties. While no actual cost figures are available it seems to be safe practice to assume that the costs of boxing a typical seven foot box for satisfactory export may be conservatively placed at between $12.50 and $15.00.

The item of freight charges to tidewater is next. Taking Grand Rapids, Mich., as a representative point of origin, and assuming shipment to the North Atlantic ports, the following rates, to Baltimore, will be found to represent a conservative average. The rates given are per 100 lbs.

Refrigerator only, boxed and crated		KD Refrigerator		Refrigerators boxed, with units installed	
LCL	CL	LCL	CL	LCL	CL
$1.11½	$0.57½	$0.84	$0.40	$1.27	$0.57½

It will be noted in the above rates that refrigerators complete with units take a higher rate when shipped LCL than the bare box, but that for carload shipments the rates are the same.

It is a safe assumption that the typical 7 foot box and unit will weigh close to 700 pounds when boxed for export, which gives a cost of $8.89 LCL and $4.42 carload for shipment to tidewater.

There are several points to be borne in mind with reference to the costs of ocean transportation. The first is that rates are generally quoted on a weight or cubage basis, the usual practice being that a ton is equivalent to 40 cubic feet of cargo space. A rate quoted as "45 and 80 ships option" means that the charges are 45 cents per cubic foot or 80 cents per hundred pounds and that the ship has the option of applying whichever rate will yield the largest amount of revenue. Sometimes rates will be quoted as "$22.00 ships option" which means $22.00 per ton weight or per 40 cubic feet volume.

The cubage of ocean freight is figured on the outside dimensions of the packing case and not on the dimensions of the refrigerator itself. Thus a typical 7 foot box, 24 x 33 x 60, figures about 27½ cubic feet. But by the time a good case has added from two and one-half to three inches on all sides the cubical contents have been increased to 37 cubic feet.

In other words, the bulk of the refrigerator itself is increased approximately 35% by the addition of the packing case and, of course, the freight charges go up accordingly.

To take a typical example. The present rate from North Atlantic ports to Cape Town, South Africa, is $20.00 per long ton, which is equivalent to 50 cents per cubic foot or 90 cents per hundred pounds ships option. If our refrigerator is knocked down so that it occupies the minimum space it has a fair chance of moving on the 90 cents per hundred pounds rate, which would give a freight charge of $5.40 for a 600 pound net weight box. Set up and crated it occupies approximately 37 cubic feet and, of course, the steamship line will exercise ships option to apply the 50 cents per cubic foot rate which will make the charge $18.50. Even if it could be shipped without being crated its 27½ cubic feet net bulk would yield the steamship line $13.75. Thus the shipper, in addition to paying $12 to $15 for an export case, must pay $4.75 freight on the case alone.

It is safe to say that as between shipping knock down or set up and boxed there is a possible saving of about $13.00 per refrigerator on ocean freight charge. To this must be added the saving due to the elimination of the packing case on the knocked down shipment which will amount to approximately $12.50 per refrigerator. And when other minor savings, such as reduced freight to the seaboard, is taken into consideration, the total saving made by shipment knock down as against set up and boxed will be very close to $30.00 per refrigerator.

To this must be added the fact that in many countries import duties are assessed on the gross weight of the shipment so that our very expensive export case takes a final crack at us by adding a substantial margin to the price of admission which our goods must pay in the foreign customs office.

Moreover, there are several instances where refrigerator parts and refrigeration machinery take lower import duties than the finished article.

Ocean freight such as electric refrigerators generally moves on what is known as general cargo rates unless sufficient traffic has been moving to warrant the installation of special commodity rates. The following table shows the current ocean rates to some of the principal markets. Wherever special rates are in effect on refrigerators they have been used, but otherwise the general cargo rates are shown.

FROM NORTH ATLANTIC PORTS		
Destination	Per cu. ft.	Per 100 lbs.
United Kingdom ports		
Refrigerators with units installed	$0.45	$0.80
Refrigerators only	.30	.54
Amsterdam and Antwerp		
Refrigerators with units installed	.45	.80
Refrigerators only	.30	.54
Hamburg		
Refrigerators with units installed	.50	.90
Refrigerators only	.32	.58
Genoa and Naples		
Refrigerators complete with units	.52½	.94
Cape Town		
Refrigerators with or without units	.50	.90
Buenos Aires and Montevideo		
Refrigerators with or without units	.36½	.65
Machinery	.30	.54
General cargo	.40	.72
Australia (Melbourne, Brisbane or Sidney) (From Atlantic Ports)		
Refrigerators with or without units	.57½	.67
Units only	.35	.63
General cargo	.45	.80
(From Pacific Ports)		
Refrigerators with or without units	.30	.60
Shanghai (From North Atlantic Ports)		
Refrigerators with or without units	.41½	.74
(From Pacific Ports)		
Refrigerators with or without units	.30	.60
Yokohoma, Kobe, Hong Kong, Manila (From North Atlantic Ports)		
Refrigerators with or without units	.40	.71
Refrigerators with or without units	.29	.57

Taking only the major items on which it is possible to save shipping costs by exporting knocked down rather than set up and crated, we may summarize them as follows for a typical shipment to Cape Town:

	Knock Down		Set Up	
	LCL	CL	LCL	CL
Packing for export	$ 0.50	$ 0.25	$12.50	$12.50
Packing unit for export when KD	2.00	2.00	...	...
Freight cost Grand Rapids to Baltimore (600 lbs. KD, 700 lbs. set up)	5.04	2.94	8.89	3.99
Ocean freight Baltimore to Cape Town	5.40	5.40	18.50	18.50
	$12.94	$10.59	$49.89	$34.99

It will be seen that on knocked down shipments the savings on the above items alone amount to $26.95 per refrigerator on LCL shipments, and $24.40 per refrigerator in carload lots. But there are many other items not included in the above tabulation where there would be further material savings, and it may be conservatively stated that the total saving would be in the neighborhood of $30.00 per refrigerator, or approximately 50% of the original cost of the box.

As a matter of fact the total saving in practice would in all probability be considerably greater, reduced insurance charges, etc., would be quite an item.

Again the assembly of the unit at destination will make possible further reduction of costs. The amount of equipment necessary for assembly and painting the modern knock down refrigerator is a comparatively small item and the labor costs involved in making the assembly outside the United States would show in almost every case a saving in cost that might equal or exceed the saving in transportation costs.

Furthermore, painting and finishing at destination has many obvious advantages in eliminating damage and making possible the delivery of clean, fresh merchandise which shows none of the wear and tear of long distance shipping and salt air damage. Moreover, finishing can be made to meet local preferences of color and decoration. And last but not least assembly at destination, especially when some of the material is purchased locally, has the decided advantage in many countries of giving the product somewhat the flavor of a locally manufactured job. This often gives a decided advantage from a sales viewpoint and often permits substantial savings in the matter of import duties. Many custom schedules offer much lower duties on partially manufactured items, and certainly the local manufacturer even though he be primarily an assembly plant is in a position to obtain the most favorable treatment in almost every instance.

ZEROZONE DEALERS OF CENTRAL ILLINOIS IN SESSION AT PEORIA

Representatives from 33 central Illinois counties were guests of the Peoria Tent & Awning Co., Peoria, Ill., Zerozone distributors, at a banquet given in their honor on January 19. These representatives were in session at Peoria for a week. This city is the service school center for Illinois Zerozone dealers.

The engineering department of the Zerozone factory was represented by Henry Neville, assistant sales manager, who was the principal speaker of the evening. Mr. Bone, of the Seeger Refrigerator Co., manufacturers of refrigerator cabinets, addressed the group, showing pictures of the processes necessary in turning out porcelain cabinets.

NEW YORK UNIVERSITY WILL REPEAT DOMESTIC REFRIGERATION COURSE

Schedule of Sessions with Subjects Announced

In response to many requests received during and since the completion of the course in household refrigeration given during the fall and early winter months by the New York University, the course will be repeated in a second term beginning February 17, 1928. Classes will be held every Friday evening from 6 to 8 P. M. at Washington Square. Tuition for the course will be $25.00 with a $1.00 registration fee and a $2.00 laboratory fee. A certificate to be given those satisfactorily completing the course will be $8.00 additional.

The course has been reorganized in accordance with experience gained in the first term's work, together with suggestions coming from those in the electric refrigeration industry.

Candidates for the course must possess at least a grammar school education. The work will be conducted on a recitation, lecture and conference basis using as a text-book "Household Refrigeration," by H. B. Hull, and as supplementary aids, notes and references in engineering periodicals. Quizzes will be given during the term and a final examination must be passed before the certificate will be awarded.

The schedule of topics is as follows:

February 17—Theory of Refrigeration.
February 24—Refrigerating Units and Their Applications.
March 2—Refrigerants and the Use of Tables of Refrigerants.
March 9—Refrigerants.*
March 16—Heat Transfer Theory. Types of Refrigerators and Their Construction.
March 23—The Manufacture of Refrigerators.*
March 30—Refrigerating Systems. Compression Type Machines.
April 13—The Compression Type of Electric Refrigerators.*
April 20—Refrigerators of the Absorption Type.
April 27—Topic to be Announced.*
May 4—Methods of Temperature Control.
May 11—Insulation Requirements for Refrigerator Cabinets.
May 18—Heat Insulating Materials Used in Refrigerators.*
May 25—Food Preservation by Refrigeration.
June 1—The Economics of Food Preservation.*
June 8—Refrigerator Testing. A Laboratory session.
June 15—The U. S. Bureau of Home Economics and Refrigeration.*
June 22—Test Apparatus. A Laboratory session.
*Lectures by specialists from the industry.

Registration for the course may be made at 32 Waverly Place, New York City, Room 306, 6:30 to 9:00 P. M., February 16, 17, 20, 1928. All communications in regard to the course should be addressed to the Director, Evening Engineering Courses, New York University, University Heights, New York City.

GOSS COMMENDS EDITORIAL ON POLICIES THAT STAY PUT

"I have been much pleased with two or three of the editorials which have appeared in ELECTRIC REFRIGERATION NEWS, and particularly so with the thought which lies behind the one in the January 18 number, entitled, Policies That Stay Put.'

"While it is true that in any young industry the mortality in employment usually runs high, and has probably run higher in the electric refrigeration industry during the past eighteen months, this does not necessarily follow entirely from the lack of stability in mehods or policies that have prevailed in the various companies.

"However, I want to compliment you on the editorial as it appeared, and to say that, personally, I am decidedly in favor of a stability of policy in the matters of design, standardization of product, sales policies and programs. I believe the history of Kelvinator fully confirms this expression of personal attitude.

"The stabilization of industry policies is of equal importance to matters of policy of the individual units or companies engaged in the business. With the proper stabilization of policies on the part of individual companies, the stabilization of the industry policies would be assured."—A. H. Goss, Electric Refrigeration Corp., Detroit, Mich.

Hallock Transferred to Atlanta

Thos. P. Hallock, for the past year district manager in charge of Kelvinator activities in Florida with headquarters at Orlando, was on February 1 transferred to Atlanta, Ga., where he assumed the position of district manager in charge of all Kelvinator-Leonard-Nizer activities in the southeastern district, which comprises the states of North and South Carolina, Tennessee, Georgia, Alabama and Florida.

LOTS TO STUDY

A sect or society of people in California propose to found a colony in Egypt where they will dress simply, raise their own food with the minimum of labor, do without bands, radios, automobiles, telephones, plumbing, artificial heat and all electric contrivances, and spend nearly all their time in study and meditation, especially meditation on why in thunder they came.—*Detroit News.*

DOW AND BRIGHT WILL ADDRESS CHICAGO AND MILWAUKEE A. S. R. E.

George B. Bright, president of the American Society of Refrigerating Engineers, Detroit, Mich., and David L. Fiske, secretary, New York City, will attend the meeting of the Chicago section at the Chicago Engineers' Club, Tuesday, February 14, and the meeting of the Milwaukee section Wednesday, February 15. The Milwaukee meeting will be a joint session of the A. S. R. E. and the American Society of Mechanical Engineers. Alex Dow, president of the A. S. M. E., and George B. Bright, president of the National A.S.R.E., will be the principal speakers.

FRIGIDAIRE BRANCH OPENED IN DALLAS

Selection of Dallas, Texas, as one of the five cities in various parts of the country which have been chosen for the location of branches of the Frigidaire and Delco-Light divisions of the General Motors Acceptance Corporation has been announced. Offices for the new branch have already been opened in the Athletic Club Building for the staff of twenty-two which was brought intact from Dayton, Ohio, with A. E. Scheidt, assistant manager of the new Dallas branch.

Territory handled by the Dallas office includes Wichita Oklahoma City, El Paso, San Antonio, Houston, New Orleans, Little Rock, Fort Worth and Dallas.

When Dallas, Texas, is host to its first regional meeting of Frigidaire salesmen of the surrounding territory on February 16, twenty executives of the Frigidaire Corporation will also be present at the meetin. It is expected that 500 salesmen from the districts of Houston, New Orleans, Little Rock, Oklahoma City, El Paso, Fort Worth, San Antonio and Memphis will be present, according to Hugh Cooper, Dallas distributor of the General Motors product. The new household models will be displayed to the visiting salesmen and refinements will be explained in detail by factory representatives.

Lipman Sales Co., Madison, Reports Steady Sales

The Lipman Sales Co., Madison, Wis., which took over distribution of Lipman automatic refrigerating machines in 1924 reports a steady growth of business, and prospects for its best year in 1928. The territory of the company covers three-quarters of the State of Wisconsin.

Receives Patent on Refrigerator Door

Rudolph A. Riek, secretary-manager of the Rhinelander Refrigerator Co., has been issued a patent on a new door construction for refrigerators. Mr. Riek's patent was obtained through Young & Young of Milwaukee.

NEW INSTALLATIONS, HERE AND THERE, REPORTED TO THE NEWS

The discarding of ice by the Kittanning Pure Milk Company, Kittanning, Pa., followed by the installation of electric refrigeration equipment and at the same time the substitution of horse and wagon delivery for motor truck delivery service are two important changes made recently. Both changes are being made for economic reasons, the first effecting a saving in milk spoilage and in labor, and the second being made after a trial of motor truck delivery service proved uneconomical.

An electric refrigeration system is to replace the old ammonia-type, steam-driven plant in the Fitch Soldiers' Home, Noroton, Conn. The old system has been in use for 42 years and had outlived its usefulness.

C. B. Hertzler, owner of the Petersburg Meat Market, Petersburg, Michigan, completes the installation of electric erfrigeration equipment in his market with the addition of cooling equipment entailing an expenditure of over $3,000. This is an addition to an electrically refrigerated display case which has been in use for some time.

Mills & Son, St. Augustine, Ill., merchants, have installed a late model Holcomb & Hoke, electrically refrigerated display counter. The case is 12 feet long and has the Frigidaire cooling coils installed at each end.

Visits G. E. Plant at Schenectady

Dessie Miller, Jr., who is connected with the refrigeration department of the Young Electric Works, Augusta, Ga., has recently spent a week at the General Electric factory in Schenectady, New York, where he studied in detail the construction and operation of the General Electric refrigerator.

Better Merchandising Conference and Exposition Held at Detroit

The second Better Merchandising Conference and Exposition will be held at the Book-Cadillac Hotel, February 15-16-17. In addition to talks by men who are known throughout the country for the successes they have made in their particular line, there will be eight trade departmental meetings and elaborate exhibits and entertainment.

Among those who will give addresses at the conference are: William Nelson Taft, editor, *Retail Ledger,* Philadelphia; Jack Woodside, general manager of the Western Company, Chicago; Paul T. Cherington, of the J. Walter Thompson Company; and Fred W. Anderson, famous merchant of Cozad, Nebraska, who does a $300,000 business in a town of 1,300 people.

New Orleans League to Sponsor Electrical Exposition

The Electrical League of New Orleans will sponsor a Louisiana Electrical Exposition to be held at the Delgado Trade School, March 5-10. The exposition will be backed by the New Orleans Public Service, Inc.

D. K. Baxter Co. Incorporated at Sioux City, Iowa

The D. K. Baxter Company, Sioux City, Iowa, has been incorporated to deal in electric refrigeration, with D. K. Baxter, president; Grace Baxter, vice-president, and J. C. Scott, secretary and treasurer.

"All of us here appreciate the NEWS very much and have several times urged our distributors to subscribe for their dealers and salesmen."—A. C. Moreland, mgr. sales promotion, Iron Mountain Co., Chicago, Ill.